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THE ABRIDGMENT 1912

CONTAINING MESSAGES
OF THE PRESIDENT OF THE UNITED STATES
TO THE TWO HOUSES OF CONGRESS

62D CONGRESS, 3D SESSION

WITH REPORTS OF DEPARTMENTS
AND SELECTIONS FROM ACCOMPANYING
PAPERS

IN TWO VOLUMES

VOL. I

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CONTENTS OF VOLUME I.

	Page.
Messages of the President of the United States:	
On our foreign relations	5
On fiscal, judicial, military, and insular affairs	29
On work of the departments of the Post Office, Interior, Agriculture, and Commerce and Labor, and District of Columbia affairs	49
Report of the Secretary of the Treasury	63
Treasurer of the United States	101
Comptroller of the Currency	133
Commissioner of Internal Revenue	188
Register of the Treasury	203
Mint Service	215
Bureau of Engraving and Printing	216
Supervising Architect	218
Public Health Service	220
Life-Saving Service	226
Revenue-Cutter Service	230
Report of the Secretary of War	235
Chief of Staff	285
The Adjutant General	331
Inspector General	369
Judge Advocate General	375
Quartermaster General	384
Commissary General	424
Surgeon General	439
Paymaster General	531
Chief of Ordnance	534
Chief of Engineers	577
Chief Signal Officer	617
Chief of Coast Artillery	637
Chief Bureau of Insular Affairs	653
Philippine Commission	674
Governor of Porto Rico	683
Isthmian Canal Commission	706
Report of the Attorney General	763

173

MESSAGES OF THE PRESIDENT OF THE UNITED STATES.

MESSAGE ON OUR FOREIGN RELATIONS.

To the Senate and House of Representatives:

The foreign relations of the United States actually and potentially affect the state of the Union to a degree not widely realized and hardly surpassed by any other factor in the welfare of the whole Nation. The position of the United States in the moral, intellectual, and material relations of the family of nations should be a matter of vital interest to every patriotic citizen. The national prosperity and power impose upon us duties which we can not shirk if we are to be true to our ideals. The tremendous growth of the export trade of the United States has already made that trade a very real factor in the industrial and commercial prosperity of the country. With the development of our industries the foreign commerce of the United States must rapidly become a still more essential factor in its economic welfare. Whether we have a farseeing and wise diplomacy and are not recklessly plunged into unnecessary wars, and whether our foreign policies are based upon an intelligent grasp of present-day world conditions and a clear view of the potentialities of the future, or are governed by a temporary and timid expediency or by narrow views befitting an infant nation, are questions in the alternative consideration of which must convince any thoughtful citizen that no department of national polity offers greater opportunity for promoting the interests of the whole people on the one hand, or greater chance on the other of permanent national injury, than that which deals with the foreign relations of the United States.

The fundamental foreign policies of the United States should be raised high above the conflict of partisanship and wholly dissociated from differences as to domestic policy. In its foreign affairs the United States should present to the world a united front. The intellectual, financial, and industrial interests of the country and the publicist, the wage earner, the farmer, and citizen of whatever occupation must cooperate in a spirit of high patriotism to promote that national solidarity which is indispensable to national efficiency and to the attainment of national ideals.

The relations of the United States with all foreign powers remain upon a sound basis of peace, harmony, and friendship. A greater insistence upon justice to American citizens or interests wherever it may have been denied and a stronger emphasis of the need of mutuality in commercial and other relations have only served to strengthen our friendships with foreign countries by placing those friendships upon a firm foundation of realities as well as aspirations.

Before briefly reviewing the more important events of the last year in our foreign relations, which it is my duty to do as charged with their conduct and because diplomatic affairs are not of a nature to make it appropriate that the Secretary of State make a formal annual report, I desire to touch upon some of the essentials to the safe management of the foreign relations of the United States and to endeavor, also, to define clearly certain concrete policies which are the logical modern corollaries of the undisputed and traditional fundamentals of the foreign policy of the United States.

REORGANIZATION OF THE STATE DEPARTMENT.

At the beginning of the present administration the United States, having fully entered upon its position as a world power, with the responsibilities thrust upon it by the results of the Spanish-American War, and already engaged in laying the groundwork of a vast foreign trade upon which it should one day become more and more dependent, found itself without the machinery for giving thorough attention to, and taking effective action upon, a mass of intricate business vital to American interests in every country in the world.

The Department of State was an archaic and inadequate machine lacking most of the attributes of the foreign office of any great modern power. With an appropriation made upon my recommendation by the Congress on August 5, 1909, the Department of State was completely reorganized. There were created Divisions of Latin-American Affairs and of Far Eastern, Near Eastern, and Western European Affairs. To these divisions were called from the foreign service diplomatic and consular officers possessing experience and knowledge gained by actual service in different parts of the world and thus familiar with political and commercial conditions in the regions concerned. The work was highly specialized. The result is that where previously this Government from time to time would emphasize in its foreign relations one or another policy, now American interests in every quarter of the globe are being cultivated with equal assiduity. This principle of politico-geographical division possesses also the good feature of making possible rotation between the officers of the departmental, the diplomatic, and the consular branches of the foreign service, and thus keeps the whole diplomatic

and consular establishments under the Department of State in close touch and equally inspired with the aims and policy of the Government. Through the newly created Division of Information the foreign service is kept fully informed of what transpires from day to day in the international relations of the country, and contemporary foreign comment affecting American interests is promptly brought to the attention of the department. The law offices of the department were greatly strengthened. There were added foreign-trade advisers to cooperate with the diplomatic and consular bureaus and the politico-geographical divisions in the innumerable matters where commercial diplomacy or consular work calls for such special knowledge. The same officers, together with the rest of the new organizations, are able at all times to give to American citizens accurate information as to conditions in foreign countries with which they have business and likewise to cooperate more effectively with the Congress and also with the other executive departments.

MERIT SYSTEM IN CONSULAR AND DIPLOMATIC CORPS.

Expert knowledge and professional training must evidently be the essence of this reorganization. Without a trained foreign service there would not be men available for the work in the reorganized Department of State. President Cleveland had taken the first step toward introducing the merit system in the foreign service. That had been followed by the application of the merit principle, with excellent results, to the entire consular branch. Almost nothing, however, had been done in this direction with regard to the Diplomatic Service. In this age of commercial diplomacy it was evidently of the first importance to train an adequate personnel in that branch of the service. Therefore, on November 26, 1909, by an Executive order I placed the Diplomatic Service up to the grade of secretary of embassy, inclusive, upon exactly the same strict nonpartisan basis of the merit system, rigid examination for appointment and promotion only for efficiency, as had been maintained without exception in the Consular Service.

STATISTICS AS TO MERIT AND NONPARTISAN CHARACTER OF APPOINTMENTS.

How faithful to the merit system and how nonpartisan has been the conduct of the Diplomatic and Consular Services in the last four years may be judged from the following: Three ambassadors now serving held their present rank at the beginning of my administration. Of the ten ambassadors whom I have appointed, five were by promotion from the rank of minister. Nine ministers now serving held their present rank at the beginning of the adminis-

tration. Of the thirty ministers whom I have appointed, eleven were promoted from the lower grades of the foreign service or from the Department of State. Of the nineteen missions in Latin America, where our relations are close and our interest is great, fifteen chiefs of mission are service men, three having entered the service during this administration. The thirty-seven secretaries of embassy or legation who have received their initial appointments after passing successfully the required examination were chosen for ascertained fitness, without regard to political affiliations. A dearth of candidates from Southern and Western States has alone made it impossible thus far completely to equalize all the States' representations in the foreign service. In the effort to equalize the representation of the various States in the Consular Service I have made sixteen of the twenty-nine new appointments as consul which have occurred during my administration from the Southern States. This is 55 per cent. Every other consular appointment made, including the promotion of eleven young men from the consular assistant and student interpreter corps, has been by promotion or transfer, based solely upon efficiency shown in the service.

In order to assure to the business and other interests of the United States a continuance of the resulting benefits of this reform, I earnestly renew my previous recommendations of legislation making it permanent along some such lines as those of the measure now pending in Congress.

LARGER PROVISION FOR EMBASSIES AND LEGATIONS AND FOR OTHER EXPENSES OF OUR FOREIGN REPRESENTATIVES RECOMMENDED.

In connection with legislation for the amelioration of the foreign service, I wish to invite attention to the advisability of placing the salary appropriations upon a better basis. I believe that the best results would be obtained by a moderate scale of salaries, with adequate funds for the expenses of proper representation, based in each case upon the scale and cost of living at each post, controlled by a system of accounting, and under the general direction of the Department of State.

In line with the object which I have sought of placing our foreign service on a basis of permanency, I have at various times advocated provision by Congress for the acquisition of Government-owned buildings for the residence and offices of our diplomatic officers, so as to place them more nearly on an equality with similar officers of other nations and to do away with the discrimination which otherwise must necessarily be made, in some cases, in favor of men having large private fortunes. The act of Congress which I approved on February 17, 1911, was a right step in this direction. The Secre-

tary of State has already made the limited recommendations permitted by the act for any one year, and it is my hope that the bill introduced in the House of Representatives to carry out these recommendations will be favorably acted on by the Congress during its present session.

In some Latin-American countries the expense of government-owned legations will be less than elsewhere, and it is certainly very urgent that in such countries as some of the Republics of Central America and the Caribbean, where it is peculiarly difficult to rent suitable quarters, the representatives of the United States should be justly and adequately provided with dignified and suitable official residences. Indeed, it is high time that the dignity and power of this great Nation should be fittingly signalized by proper buildings for the occupancy of the Nation's representatives everywhere abroad.

DIPLOMACY A HANDMAID OF COMMERCIAL INTERCOURSE AND PEACE.

The diplomacy of the present administration has sought to respond to modern ideas of commercial intercourse. This policy has been characterized as substituting dollars for bullets. It is one that appeals alike to idealistic humanitarian sentiments, to the dictates of sound policy and strategy, and to legitimate commercial aims. It is an effort frankly directed to the increase of American trade upon the axiomatic principle that the Government of the United States shall extend all proper support to every legitimate and beneficial American enterprise abroad. How great have been the results of this diplomacy, coupled with the maximum and minimum provision of the tariff law, will be seen by some consideration of the wonderful increase in the export trade of the United States. Because modern diplomacy is commercial, there has been a disposition in some quarters to attribute to it none but materialistic aims. How strikingly erroneous is such an impression may be seen from a study of the results by which the diplomacy of the United States can be judged.

SUCCESSFUL EFFORTS IN PROMOTION OF PEACE.

In the field of work toward the ideals of peace this Government negotiated, but to my regret was unable to consummate, two arbitration treaties which set the highest mark of the aspiration of nations toward the substitution of arbitration and reason for war in the settlement of international disputes. Through the efforts of American diplomacy several wars have been prevented or ended. I refer to the successful tripartite mediation of the Argentine Republic, Brazil, and the United States between Peru and Ecuador; the bringing of the boundary dispute between Panama and Costa Rica to

peaceful arbitration; the staying of warlike preparations when Haiti and the Dominican Republic were on the verge of hostilities; the stopping of a war in Nicaragua; the halting of internecine strife in Honduras. The Government of the United States was thanked for its influence toward the restoration of amicable relations between the Argentine Republic and Bolivia. The diplomacy of the United States is active in seeking to assuage the remaining ill-feeling between this country and the Republic of Colombia. In the recent civil war in China the United States successfully joined with the other interested powers in urging an early cessation of hostilities. An agreement has been reached between the Governments of Chile and Peru whereby the celebrated Tacna-Arica dispute, which has so long embittered international relations on the west coast of South America, has at last been adjusted. Simultaneously came the news that the boundary dispute between Peru and Ecuador had entered upon a stage of amicable settlement. The position of the United States in reference to the Tacna-Arica dispute between Chile and Peru has been one of nonintervention, but one of friendly influence and pacific counsel throughout the period during which the dispute in question has been the subject of interchange of views between this Government and the two Governments immediately concerned. In the general easing of international tension on the west coast of South America the tripartite mediation, to which I have referred, has been a most potent and beneficent factor.

CHINA.

In China the policy of encouraging financial investment to enable that country to help itself has had the result of giving new life and practical application to the open-door policy. The consistent purpose of the present administration has been to encourage the use of American capital in the development of China by the promotion of those essential reforms to which China is pledged by treaties with the United States and other powers. The hypothecation to foreign bankers in connection with certain industrial enterprises, such as the Hukuang railways, of the national revenues upon which these reforms depended, led the Department of State early in the administration to demand for American citizens participation in such enterprises, in order that the United States might have equal rights and an equal voice in all questions pertaining to the disposition of the public revenues concerned. The same policy of promoting international accord among the powers having similar treaty rights as ourselves in the matters of reform, which could not be put into practical effect without the common consent of all, was likewise adopted in the case of the loan desired by China for the reform of its currency. The principle of international cooperation in matters of common interest

upon which our policy had already been based in all of the above instances has admittedly been a great factor in that concert of the powers which has been so happily conspicuous during the perilous period of transition through which the great Chinese nation has been passing.

CENTRAL AMERICA NEEDS OUR HELP IN DEBT ADJUSTMENT.

In Central America the aim has been to help such countries as Nicaragua and Honduras to help themselves. They are the immediate beneficiaries. The national benefit to the United States is twofold. First, it is obvious that the Monroe doctrine is more vital in the neighborhood of the Panama Canal and the zone of the Caribbean than anywhere else. There, too, the maintenance of that doctrine falls most heavily upon the United States. It is therefore essential that the countries within that sphere shall be removed from the jeopardy involved by heavy foreign debt and chaotic national finances and from the ever-present danger of international complications due to disorder at home. Hence the United States has been glad to encourage and support American bankers who were willing to lend a helping hand to the financial rehabilitation of such countries because this financial rehabilitation and the protection of their customhouses from being the prey of would-be dictators would remove at one stroke the menace of foreign creditors and the menace of revolutionary disorder.

The second advantage to the United States is one affecting chiefly all the southern and Gulf ports and the business and industry of the South. The Republics of Central America and the Caribbean possess great natural wealth. They need only a measure of stability and the means of financial regeneration to enter upon an era of peace and prosperity, bringing profit and happiness to themselves and at the same time creating conditions sure to lead to a flourishing interchange of trade with this country.

I wish to call your especial attention to the recent occurrences in Nicaragua, for I believe the terrible events recorded there during the revolution of the past summer—the useless loss of life, the devastation of property, the bombardment of defenseless cities, the killing and wounding of women and children, the torturing of noncombatants to exact contributions, and the suffering of thousands of human beings—might have been averted had the Department of State, through approval of the loan convention by the Senate, been permitted to carry out its now well-developed policy of encouraging the extending of financial aid to weak Central American States with the primary objects of avoiding just such revolutions by assisting those Republics to rehabilitate their finances, to establish their cur-

rency on a stable basis, to remove the customhouses from the danger of revolutions by arranging for their secure administration, and to establish reliable banks.

During this last revolution in Nicaragua, the Government of that Republic having admitted its inability to protect American life and property against acts of sheer lawlessness on the part of the malcontents, and having requested this Government to assume that office, it became necessary to land over 2,000 marines and bluejackets in Nicaragua. Owing to their presence the constituted Government of Nicaragua was free to devote its attention wholly to its internal troubles, and was thus enabled to stamp out the rebellion in a short space of time. When the Red Cross supplies sent to Granada had been exhausted, 8,000 persons having been given food in one day upon the arrival of the American forces, our men supplied other unfortunate, needy Nicaraguans from their own haversacks. I wish to congratulate the officers and men of the United States Navy and Marine Corps who took part in reestablishing order in Nicaragua upon their splendid conduct, and to record with sorrow the death of seven American marines and bluejackets. Since the reestablishment of peace and order, elections have been held amid conditions of quiet and tranquillity. Nearly all the American marines have now been withdrawn. The country should soon be on the road to recovery. The only apparent danger now theatening Nicaragua arises from the shortage of funds. Although American bankers have already rendered assistance, they may naturally be loath to advance a loan adequate to set the country upon its feet without the support of some such convention as that of June, 1911. upon which the Senate has not yet acted.

ENFORCEMENT OF NEUTRALITY LAWS.

In the general effort to contribute to the enjoyment of peace by those Republics which are near neighbors of the United States, the administration has enforced the so-called neutrality statutes with a new vigor, and those statutes were greatly strengthened in restricting the exportation of arms and munitions by the joint resolution of last March. It is still a regrettable fact that certain American ports are made the rendezvous of professional revolutionists and others engaged in intrigue against the peace of those Republics. It must be admitted that occasionally a revolution in this region is justified as a real popular movement to throw off the shackles of a vicious and tyrannical government. Such was the Nicaraguan revolution against the Zelaya régime. A nation enjoying our liberal institutions can not escape sympathy with a true popular movement, and one so well justified. In very many cases, however, revolutions in the Republics in question have no basis in principle, but are

due merely to the machinations of conscienceless and ambitious men, and have no effect but to bring new suffering and fresh burdens to an already oppressed people. The question whether the use of American ports as *foci* of revolutionary intrigue can be best dealt with by a further amendment to the neutrality statutes or whether it would be safer to deal with special cases by special laws is one worthy of the careful consideration of the Congress.

VISIT OF SECRETARY KNOX TO CENTRAL AMERICA AND THE CARIBBEAN.

Impressed with the particular importance of the relations between the United States and the Republics of Central America and the Caribbean region, which of necessity must become still more intimate by reason of the mutual advantages which will be presented by the opening of the Panama Canal, I directed the Secretary of State last February to visit these Republics for the purpose of giving evidence of the sincere friendship and good will which the Government and people of the United States bear toward them. Ten Republics were visited. Everywhere he was received with a cordiality of welcome and a generosity of hospitality such as to impress me deeply and to merit our warmest thanks. The appreciation of the Governments and peoples of the countries visited, which has been appropriately shown in various ways, leaves me no doubt that his visit will conduce to that closer union and better understanding between the United States and those Republics which I have had it much at heart to promote.

OUR MEXICAN POLICY.

For two years revolution and counter-revolution have distraught the neighboring Republic of Mexico. Brigandage has involved a great deal of depredation upon foreign interests. There have constantly recurred questions of extreme delicacy. On several occasions very difficult situations have arisen on our frontier. Throughout this trying period, the policy of the United States has been one of patient nonintervention, steadfast recognition of constituted authority in the neighboring nation, and the exertion of every effort to care for American interests. I profoundly hope that the Mexican nation may soon resume the path of order, prosperity, and progress. To that nation in its sore troubles, the sympathetic friendship of the United States has been demonstrated to a high degree. There were in Mexico at the beginning of the revolution some thirty or forty thousand American citizens engaged in enterprises contributing greatly to the prosperity of that Republic and also benefiting the important trade between the two countries. The investment of American capital in Mexico has been estimated at $1,000,000,000. The responsibility of endeavoring to safeguard those interests and the dangers inseparable

from propinquity to so turbulent a situation have been great, but I am happy to have been able to adhere to the policy above outlined—a policy which I hope may be soon justified by the complete success of the Mexican people in regaining the blessings of peace and good order.

AGRICULTURAL CREDITS.

A most important work, accomplished in the past year by the American diplomatic officers in Europe, is the investigation of the agricultural credit system in the European countries. Both as a means to afford relief to the consumers of this country through a more thorough development of agricultural resources and as a means of more sufficiently maintaining the agricultural population, the project to establish credit facilities for the farmers is a concern of vital importance to this Nation. No evidence of prosperity among well-established farmers should blind us to the fact that lack of capital is preventing a development of the Nation's agricultural resources and an adequate increase of the land under cultivation; that agricultural production is fast falling behind the increase in population; and that, in fact, although these well-established farmers are maintained in increasing prosperity because of the natural increase in population, we are not developing the industry of agriculture. We are not breeding in proportionate numbers a race of independent and independence-loving landowners, for a lack of which no growth of cities can compensate. Our farmers have been our mainstay in times of crisis, and in future it must still largely be upon their stability and common sense that this democracy must rely to conserve its principles of self-government.

The need of capital which American farmers feel to-day had been experienced by the farmers of Europe, with their centuries-old farms, many years ago. The problem had been successfully solved in the Old World and it was evident that the farmers of this country might profit by a study of their systems. I therefore ordered, through the Department of State, an investigation to be made by the diplomatic officers in Europe, and I have laid the results of this investigation before the governors of the various States with the hope that they will be used to advantage in their forthcoming meeting.

INCREASE OF FOREIGN TRADE.

In my last annual message I said that the fiscal year ended June 30, 1911, was noteworthy as marking the highest record of exports of American products to foreign countries. The fiscal year 1912 shows that this rate of advance has been maintained, the total domestic exports having a valuation approximately of $2,200,000,000, as compared with a fraction over $2,000,000,000 the previous year. It is also

significant that manufactured and partly manufactured articles continue to be the chief commodities forming the volume of our augmented exports, the demands of our own people for consumption requiring that an increasing proportion of our abundant agricultural products be kept at home. In the fiscal year 1911 the exports of articles in the various stages of manufacture, not including foodstuffs partly or wholly manufactured, amounted approximately to $907,500,000. In the fiscal year 1912 the total was nearly $1,022,000,000, a gain of $114,000,000.

ADVANTAGE OF MAXIMUM AND MINIMUM TARIFF PROVISION.

The importance which our manufactures have assumed in the commerce of the world in competition with the manufactures of other countries again draws attention to the duty of this Government to use its utmost endeavors to secure impartial treatment for American products in all markets. Healthy commercial rivalry in international intercourse is best assured by the possession of proper means for protecting and promoting our foreign trade. It is natural that competitive countries should view with some concern this steady expansion of our commerce. If in some instances the measure taken by them to meet it are not entirely equitable, a remedy should be found. In former messages I have described the negotiations of the Department of State with foreign Governments for the adjustment of the maximum and minimum tariff as provided in section 2 of the tariff law of 1909. The advantages secured by the adjustment of our trade relations under this law have continued during the last year, and some additional cases of discriminatory treatment of which we had reason to complain have been removed. The Department of State has for the first time in the history of this country obtained substantial most-favored-nation treatment from all the countries of the world. There are, however, other instances which, while apparently not constituting undue discrimination in the sense of section 2, are nevertheless exceptions to the complete equity of tariff treatment for American products that the Department of State consistently has sought to obtain for American commerce abroad.

NECESSITY FOR SUPPLEMENTARY LEGISLATION.

These developments confirm the opinion conveyed to you in my annual message of 1911, that while the maximum and minimum provision of the tariff law of 1909 has been fully justified by the success achieved in removing previously existing undue discriminations against American products, yet experience has shown that this feature of the law should be amended in such way as to provide a fully effective means of meeting the varying degrees of discriminatory

treatment of American commerce in foreign countries still encountered, as well as to protect against injurious treatment on the part of foreign Governments, through either legislative or administrative measures, the financial interests abroad of American citizens whose enterprises enlarge the market for American commodities.

I can not too strongly recommend to the Congress the passage of some such enabling measure as the bill which was recommended by the Secretary of State in his letter of December 13, 1911. The object of the proposed legislation is, in brief, to enable the Executive to apply, as the case may require, to any or all commodities, whether or not on the free list from a country which discriminates against the United States, a graduated scale of duties up to the maximum of 25 per cent *ad valorem* provided in the present law. Flat tariffs are out of date. Nations no longer accord equal tariff treatment to all other nations irrespective of the treatment from them received. Such a flexible power at the command of the Executive would serve to moderate any unfavorable tendencies on the part of those countries from which the importations into the United States are substantially confined to articles on the free list as well as of the countries which find a lucrative market in the United States for their products under existing customs rates. It is very necessary that the American Government should be equipped with weapons of negotiation adapted to modern economic conditions, in order that we may at all times be in a position to gain not only technically just but actually equitable treatment for our trade, and also for American enterprise and vested interests abroad.

BUSINESS SECURED TO OUR COUNTRY BY DIRECT OFFICIAL EFFORT.

As illustrating the commercial benefits to the Nation derived from the new diplomacy and its effectiveness upon the material as well as the more ideal side, it may be remarked that through direct official efforts alone there have been obtained in the course of this administration, contracts from foreign Governments involving an expenditure of $50,000,000 in the factories of the United States. Consideration of this fact and some reflection upon the necessary effects of a scientific tariff system and a foreign service alert and equipped to cooperate with the business men of America carry the conviction that the gratifying increase in the export trade of this country is, in substantial amount, due to our improved governmental methods of protecting and stimulating it. It is germane to these observations to remark that in the two years that have elapsed since the successful negotiation of our new treaty with Japan, which at the time seemed to present so many practical difficulties, our export trade to that country has increased at the rate of over $1,000,000 a month. Our exports to Japan for the year ended June 30, 1910,

were $21,959,310, while for the year ended June 30, 1912, the exports were $53,478,046, a net increase in the sale of American products of nearly 150 per cent.

SPECIAL CLAIMS ARBITRATION WITH GREAT BRITAIN.

Under the special agreement entered into between the United States and Great Britain on August 18, 1910, for the arbitration of outstanding pecuniary claims, a schedule of claims and the terms of submission have been agreed upon by the two Governments, and together with the special agreement were approved by the Senate on July 19, 1911, but in accordance with the terms of the agreement they did not go into effect until confirmed by the two Governments by an exchange of notes, which was done on April 26 last. Negotiations are still in progress for a supplemental schedule of claims to be submitted to arbitration under this agreement, and meanwhile the necessary preparations for the arbitration of the claims included in the first schedule have been undertaken and are being carried on under the authority of an appropriation made for that purpose at the last session of Congress. It is anticipated that the two Governments will be prepared to call upon the arbitration tribunal, established under this agreement, to meet at Washington early next year to proceed with this arbitration.

FUR SEAL TREATY AND NEED FOR AMENDMENT OF OUR STATUTE.

The act adopted at the last session of Congress to give effect to the fur-seal convention of July 7, 1911, between Great Britain, Japan, Russia, and the United States provided for the suspension of all land killing of seals on the Pribilof Islands for a period of five years, and an objection has now been presented to this provision by the other parties in interest, which raises the issue as to whether or not this prohibition of land killing is inconsistent with the spirit, if not the letter, of the treaty stipulations. The justification for establishing this close season depends, under the terms of the convention, upon how far, if at all, it is necessary for protecting and preserving the American fur-seal herd and for increasing its number. This is a question requiring examination of the present condition of the herd and the treatment which it needs in the light of actual experience and scientific investigation. A careful examination of the subject is now being made, and this Government will soon be in possession of a considerable amount of new information about the American seal herd, which has been secured during the past season and will be of great value in determining this question; and if it should appear that there is any uncertainty as to the real necessity for imposing a

close season at this time I shall take an early opportunity to address a special message to Congress on this subject, in the belief that this Government should yield on this point rather than give the slightest ground for the charge that we have been in any way remiss in observing our treaty obligations.

FINAL SETTLEMENT OF NORTH ATLANTIC FISHERIES DISPUTE.

On the 20th of July last an agreement was concluded between the United States and Great Britain adopting, with certain modifications, the rules and method of procedure recommended in the award rendered by the North Atlantic Coast Fisheries Arbitration Tribunal on September 7, 1910, for the settlement hereafter, in accordance with the principles laid down in the award, of questions arising with reference to the exercise of the American fishing liberties under Article I of the treaty of October 20, 1818, between the United States and Great Britain. This agreement received the approval of the Senate on August 1 and was formally ratified by the two Governments on November 15 last. The rules and a method of procedure embodied in the award provided for determining by an impartial tribunal the reasonableness of any new fishery regulations on the treaty coasts of Newfoundland and Canada before such regulations could be enforced against American fishermen exercising their treaty liberties on those coasts, and also for determining the delimitation of bays on such coasts more than 10 miles wide, in accordance with the definition adopted by the tribunal of the meaning of the word "bays" as used in the treaty. In the subsequent negotiations between the two Governments, undertaken for the purpose of giving practical effect to these rules and methods of procedure, it was found that certain modifications therein were desirable from the point of view of both Governments, and these negotiations have finally resulted in the agreement above mentioned by which the award recommendations as modified by mutual consent of the two Governments are finally adopted and made effective, thus bringing this century-old controversy to a final conclusion, which is equally beneficial and satisfactory to both Governments.

IMPERIAL VALLEY AND MEXICO.

In order to make possible the more effective performance of the work necessary for the confinement in their present channel of the waters of the lower Colorado River, and thus to protect the people of the Imperial Valley, as well as in order to reach with the Government of Mexico an understanding regarding the distribution of the waters of the Colorado River, in which both Governments are much interested, negotiations are going forward with a view to the establishment of a preliminary Colorado River commission, which shall

have the powers necessary to enable it to do the needful work and with authority to study the question of the equitable distribution of the waters. There is every reason to believe that an understanding upon this point will be reached and that an agreement will be signed in the near future.

CHAMIZAL DISPUTE.

In the interest of the people and city of El Paso this Government has been assiduous in its efforts to bring to an early settlement the long-standing Chamizal dispute with Mexico. Much has been accomplished, and while the final solution of the dispute is not immediate, the favorable attitude lately assumed by the Mexican Government encourages the hope that this troublesome question will be satisfactorily and definitively settled at an early day.

INTERNATIONAL COMMISSION OF JURISTS.

In pursuance of the convention of August 23, 1906, signed at the Third Pan American Conference, held at Rio de Janeiro, the International Commission of Jurists met at that capital during the month of last June. At this meeting 16 American Republics were represented, including the United States, and comprehensive plans for the future work of the commission were adopted. At the next meeting fixed for June, 1914, committees already appointed are instructed to report regarding topics assigned to them.

OPIUM CONFERENCE—UNFORTUNATE FAILURE OF OUR GOVERNMENT TO ENACT RECOMMENDED LEGISLATION.

In my message on foreign relations communicated to the two Houses of Congress December 7, 1911, I called especial attention to the assembling of the Opium Conference at The Hague, to the fact that that conference was to review all pertinent municipal laws relating to the opium and allied evils, and certainly all international rules regarding these evils, and to the fact that it seemed to me most essential that the Congress should take immediate action on the antinarcotic legislation before the Congress, to which I had previously called attention by a special message.

The international convention adopted by the conference conforms almost entirely to the principles contained in the proposed antinarcotic legislation which has been before the last two Congresses. It was most unfortunate that this Government, having taken the initiative in the international action which eventuated in the important international opium convention, failed to do its share in the great work by neglecting to pass the necessary legislation to correct the deplorable narcotic evil in the United States as well as to redeem

international pledges upon which it entered by virtue of the above-mentioned convention. The Congress at its present session should enact into law those bills now before it which have been so carefully drawn up in collaboration between the Department of State and the other executive departments, and which have behind them not only the moral sentiment of the country, but the practical support of all the legitimate trade interests likely to be affected. Since the international convention was signed, adherence to it has been made by several European States not represented at the conference at The Hague and also by seventeen Latin-American Republics.

EUROPE AND THE NEAR EAST.

The war between Italy and Turkey came to a close in October last by the signature of a treaty of peace, subsequently to which the Ottoman Empire renounced sovereignty over Cyrenaica and Tripolitania in favor of Italy. During the past year the Near East has unfortunately been the theater of constant hostilities. Almost simultaneously with the conclusion of peace between Italy and Turkey and their arrival at an adjustment of the complex questions at issue between them, war broke out between Turkey on the one hand and Bulgaria, Greece, Montenegro, and Servia on the other. The United States has happily been involved neither directly nor indirectly with the causes or questions incident to any of these hostilities and has maintained in regard to them an attitude of absolute neutrality and of complete political disinterestedness. In the second war in which the Ottoman Empire has been engaged the loss of life and the consequent distress on both sides have been appalling, and the United States has found occasion, in the interest of humanity, to carry out the charitable desires of the American people, to extend a measure of relief to the sufferers on either side through the impartial medium of the Red Cross. Beyond this the chief care of the Government of the United States has been to make due provision for the protection of its nationals resident in belligerent territory. In the exercise of my duty in this matter I have dispatched to Turkish waters a special-service squadron, consisting of two armored cruisers, in order that this Government may if need be bear its part in such measures as it may be necessary for the interested nations to adopt for the safeguarding of foreign lives and property in the Ottoman Empire in the event that a dangerous situation should develop. In the meanwhile the several interested European powers have promised to extend to American citizens the benefit of such precautionary or protective measures as they might adopt, in the same manner in which it has been the practice of this Government to extend its protection to all foreigners resident in those countries of

the Western Hemisphere in which it has from time to time been the task of the United States to act in the interest of peace and good order. The early appearance of a large fleet of European warships in the Bosphorus apparently assured the protection of foreigners in that quarter, where the presence of the American *stationnaire* the U. S. S. *Scorpion* sufficed, under the circumstances, to represent the United States. Our cruisers were thus left free to act if need be along the Mediterranean coasts should any unexpected contingency arise affecting the numerous American interests in the neighborhood of Smyrna and Beirut.

SPITZBERGEN.

The great preponderance of American material interests in the subarctic island of Spitzbergen, which has always been regarded politically as "no man's land," impels this Government to a continued and lively interest in the international dispositions to be made for the political governance and administration of that region. The conflict of certain claims of American citizens and others is in a fair way to adjustment, while the settlement of matters of administration, whether by international conference of the interested powers or otherwise, continues to be the subject of exchange of views between the Governments concerned.

LIBERIA.

As a result of the efforts of this Government to place the Government of Liberia in position to pay its outstanding indebtedness and to maintain a stable and efficient government, negotiations for a loan of $1,700,000 have been successfully concluded, and it is anticipated that the payment of the old loan and the issuance of the bonds of the 1912 loan for the rehabilitation of the finances of Liberia will follow at an early date, when the new receivership will go into active operation. The new receivership will consist of a general receiver of customs designated by the Government of the United States and three receivers of customs designated by the Governments of Germany, France, and Great Britain, which countries have commercial interests in the Republic of Liberia.

In carrying out the understanding between the Government of Liberia and that of the United States, and in fulfilling the terms of the agreement between the former Government and the American bankers, three competent ex-army officers are now effectively employed by the Liberian Government in reorganizing the police force of the Republic, not only to keep in order the native tribes in the hinterland but to serve as a necessary police force along the frontier. It is hoped that these measures will assure not only the continued existence but the prosperity and welfare of the Republic of Liberia. Liberia possesses fertility of soil and natural resources, which should

insure to its people a reasonable prosperity. It was the duty of the United States to assist the Republic of Liberia in accordance with our historical interest and moral guardianship of a community founded by American citizens, as it was also the duty of the American Government to attempt to assure permanence to a country of much sentimental and perhaps future real interest to a large body of our citizens.

MOROCCO.

The legation at Tangier is now in charge of our consul general, who is acting as chargé d'affaires, as well as caring for our commercial interests in that country. In view of the fact that many of the foreign powers are now represented by chargés d'affaires it has not been deemed necessary to appoint at the present time a minister to fill a vacancy occurring in that post.

THE FAR EAST.

The political disturbances in China in the autumn and winter of 1911–12 resulted in the abdication of the Manchu rulers on February 12, followed by the formation of a provisional republican government empowered to conduct the affairs of the nation until a permanent government might be regularly established. The natural sympathy of the American people with the assumption of republican principles by the Chinese people was appropriately expressed in a concurrent resolution of Congress on April 17, 1912. A constituent assembly, composed of representatives duly chosen by the people of China in the elections that are now being held, has been called to meet in January next to adopt a permanent constitution and organize the Government of the nascent Republic. During the formative constitutional stage and pending definitive action by the assembly, as expressive of the popular will, and the hoped-for establishment of a stable republican form of government, capable of fulfilling its international obligations, the United States is, according to precedent, maintaining full and friendly *de facto* relations with the provisional Government.

The new condition of affairs thus created has presented many serious and complicated problems, both of internal rehabilitation and of international relations, whose solution it was realized would necessarily require much time and patience. From the beginning of the upheaval last autumn it was felt by the United States, in common with the other powers having large interests in China, that independent action by the foreign Governments in their own individual interests would add further confusion to a situation already complicated. A policy of international cooperation was accordingly adopted in an understanding, reached early in the disturbances, to

act together for the protection of the lives and property of foreigners if menaced, to maintain an attitude of strict impartiality as between the contending factions, and to abstain from any endeavor to influence the Chinese in their organization of a new form of government. In view of the seriousness of the disturbances and their general character, the American minister at Peking was instructed at his discretion to advise our nationals in the affected districts to concentrate at such centers as were easily accessible to foreign troops or men of war. Nineteen of our naval vessels were stationed at various Chinese ports, and other measures were promptly taken for the adequate protection of American interests.

It was further mutually agreed, in the hope of hastening an end to hostilities, that none of the interested powers would approve the making of loans by its nationals to either side. As soon, however, as a united provisional Government of China was assured, the United States joined in a favorable consideration of that Government's request for advances needed for immediate administrative necessities and later for a loan to effect a permanent national reorganization. The interested Governments had already, by common consent, adopted, in respect to the purposes, expenditure, and security of any loans to China made by their nationals, certain conditions which were held to be essential, not only to secure reasonable protection for the foreign investors, but also to safeguard and strengthen China's credit by discouraging indiscriminate borrowing and by insuring the application of the funds toward the establishment of the stable and effective government necessary to China's welfare. In June last representative banking groups of the United States, France, Germany, Great Britain, Japan, and Russia formulated, with the general sanction of their respective Governments, the guaranties that would be expected in relation to the expenditure and security of the large reorganization loan desired by China, which, however, have thus far proved unacceptable to the provisional Government.

SPECIAL MISSION OF CONDOLENCE TO JAPAN.

In August last I accredited the Secretary of State as special ambassador to Japan, charged with the mission of bearing to the imperial family, the Government, and the people of that Empire the sympathetic message of the American Commonwealth on the sad occasion of the death of His Majesty the Emperor Mutsuhito, whose long and benevolent reign was the greater part of Japan's modern history. The kindly reception everywhere accorded to Secretary Knox showed that his mission was deeply appreciated by the Japanese nation and emphasized strongly the friendly relations that have for so many years existed between the two peoples.

SOUTH AMERICA.

Our relations with the Argentine Republic are most friendly and cordial. So, also, are our relations with Brazil, whose Government has accepted the invitation of the United States to send two army officers to study at the Coast Artillery School at Fort Monroe. The long-standing Alsop claim, which had been the only hindrance to the healthy growth of the most friendly relations between the United States and Chile, having been eliminated through the submission of the question to His Britannic Majesty King George V as "amiable compositeur," it is a cause of much gratification to me that our relations with Chile are now established upon a firm basis of growing friendship. The Chilean Government has placed an officer of the United States Coast Artillery in charge of the Chilean Coast Artillery School, and has shown appreciation of American methods by confiding to an American firm important work for the Chilean coast defenses.

Last year a revolution against the established Government of Ecuador broke out at the principal port of that Republic. Previous to this occurrence the chief American interest in Ecuador, represented by the Guayaquil & Quito Railway Co., incorporated in the United States, had rendered extensive transportation and other services on account to the Ecuadorian Government, the amount of which ran into a sum which was steadily increasing and which the Ecuadorian Government had made no provision to pay, thereby threatening to crush out the very existence of this American enterprise. When tranquillity had been restored to Ecuador as a result of the triumphant progress of the Government forces from Quito, this Government interposed its good offices to the end that the American interests in Ecuador might be saved from complete extinction. As a part of the arrangement which was reached between the parties, and at the request of the Government of Ecuador, I have consented to name an arbitrator, who, acting under the terms of the railroad contract, with an arbitrator named by the Ecuadorian Government, will pass upon the claims that have arisen since the arrangement reached through the action of a similar arbitral tribunal in 1908.

In pursuance of a request made some time ago by the Ecuadorian Government, the Department of State has given much attention to the problem of the proper sanitation of Guayaquil. As a result a detail of officers of the Canal Zone will be sent to Guayaquil to recommend measures that will lead to the complete permanent sanitation of this plague and fever infected region of that Republic, which has for so long constituted a menace to health conditions on the Canal Zone. It is hoped that the report which this mission will furnish will point out a way whereby the modicum

of assistance which the United States may properly lend the Ecuadorian Government may be made effective in ridding the west coast of South America of a focus of contagion to the future commercial current passing through the Panama Canal.

In the matter of the claim of John Celestine Landreau against the Government of Peru, which claim arises out of certain contracts and transactions in connection with the discovery and exploitation of guano, and which has been under discussion between the two Governments since 1874, I am glad to report that as the result of prolonged negotiations, which have been characterized by the utmost friendliness and good will on both sides, the Department of State has succeeded in securing the consent of Peru to the arbitration of the claim, and that the negotiations attending the drafting and signature of a protocol submitting the claim to an arbitral tribunal are proceeding with due celerity.

An officer of the American Public Health Service and an American sanitary engineer are now on the way to Iquitos, in the employ of the Peruvian Government, to take charge of the sanitation of that river port. Peru is building a number of submarines in this country, and continues to show every desire to have American capital invested in the Republic.

In July the United States sent undergraduate delegates to the Third International Students Congress held at Lima, American students having been for the first time invited to one of these meetings.

The Republic of Uruguay has shown its appreciation of American agricultural and other methods by sending a large commission to this country and by employing many American experts to assist in building up agricultural and allied industries in Uruguay.

Venezuela is paying off the last of the claims the settlement of which was provided for by the Washington protocols, including those of American citizens. Our relations with Venezuela are most cordial, and the trade of that Republic with the United States is now greater than with any other country.

CENTRAL AMERICA AND THE CARIBBEAN.

During the past summer the revolution against the administration which followed the assassination of President Caceres a year ago last November brought the Dominican Republic to the verge of administrative chaos, without offering any guaranties of eventual stability in the ultimate success of either party. In pursuance of the treaty relations of the United States with the Dominican Republic, which were threatened by the necessity of suspending the operation under American administration of the customhouses on the Haitian

frontier, it was found necessary to dispatch special commissioners to the island to reestablish the customhouses and with a guard sufficient to insure needed protection to the customs administration. The efforts which have been made appear to have resulted in the restoration of normal conditions throughout the Republic. The good offices which the commissioners were able to exercise were instrumental in bringing the contending parties together and in furnishing a basis of adjustment which it is hoped will result in permanent benefit to the Dominican people.

Mindful of its treaty relations, and owing to the position of the Government of the United States as mediator between the Dominican Republic and Haiti in their boundary dispute, and because of the further fact that the revolutionary activities on the Haitian-Dominican frontier had become so active as practically to obliterate the line of demarcation that had been heretofore recognized pending the definitive settlement of the boundary in controversy, it was found necessary to indicate to the two island Governments a provisional *de facto* boundary line. This was done without prejudice to the rights or obligations of either country in a final settlement to be reached by arbitration. The tentative line chosen was one which, under the circumstances brought to the knowledge of this Government, seemed to conform to the best interests of the disputants. The border patrol which it had been found necessary to reestablish for customs purposes between the two countries was instructed provisionally to observe this line.

The Republic of Cuba last May was in the throes of a lawless uprising that for a time threatened the destruction of a great deal of valuable property—much of it owned by Americans and other foreigners—as well as the existence of the Government itself. The armed forces of Cuba being inadequate to guard property from attack and at the same time properly to operate against the rebels, a force of American marines was dispatched from our naval station at Guantanamo into the Province of Oriente for the protection of American and other foreign life and property. The Cuban Government was thus able to use all its forces in putting down the outbreak, which it succeeded in doing in a period of six weeks. The presence of two American warships in the harbor of Habana during the most critical period of this disturbance contributed in great measure to allay the fears of the inhabitants, including a large foreign colony.

There has been under discussion with the Government of Cuba for some time the question of the release by this Government of its leasehold rights at Bahia Honda, on the northern coast of Cuba, and the enlargement, in exchange therefor, of the naval station which has been established at Guantanamo Bay, on the south. As the result of the negotiations thus carried on an agreement has been reached

between the two Governments providing for the suitable enlargement of the Guantanamo Bay station upon terms which are entirely fair and equitable to all parties concerned.

At the request alike of the Government and both political parties in Panama, an American commission undertook supervision of the recent presidential election in that Republic, where our treaty relations, and, indeed, every geographical consideration, make the maintenance of order and satisfactory conditions of peculiar interest to the Government of the United States. The elections passed without disorder, and the new administration has entered upon its functions.

The Government of Great Britain has asked the support of the United States for the protection of the interests of British holders of the foreign bonded debt of Guatemala. While this Government is hopeful of an arrangement equitable to the British bondholders, it is naturally unable to view the question apart from its relation to the broad subject of financial stability in Central America, in which the policy of the United States does not permit it to escape a vital interest. Through a renewal of negotiations between the Government of Guatemala and American bankers, the aim of which is a loan for the rehabilitation of Guatemalan finances, a way appears to be open by which the Government of Guatemala could promptly satisfy any equitable and just British claims, and at the same time so improve its whole financial position as to contribute greatly to the increased prosperity of the Republic and to redound to the benefit of foreign investments and foreign trade with that country. Failing such an arrangement, it may become impossible for the Government of the United States to escape its obligations in connection with such measures as may become necessary to exact justice to legitimate foreign claims.

In the recent revolution in Nicaragua, which, it was generally admitted, might well have resulted in a general Central American conflict but for the intervention of the United States, the Government of Honduras was especially menaced; but fortunately peaceful conditions were maintained within the borders of that Republic. The financial condition of that country remains unchanged, no means having been found for the final adjustment of pressing outstanding foreign claims. This makes it the more regrettable that the financial convention between the United States and Honduras has thus far failed of ratification. The Government of the United States continues to hold itself ready to cooperate with the Government of Honduras, which, it is believed, can not much longer delay the meeting of its foreign obligations, and it is hoped at the proper time American bankers will be willing to cooperate for this purpose.

NECESSITY FOR GREATER GOVERNMENTAL EFFORT IN RETENTION AND EXPANSION OF OUR FOREIGN TRADE.

It is not possible to make to the Congress a communication upon the present foreign relations of the United States so detailed as to convey an adequate impression of the enormous increase in the importance and activities of those relations. If this Government is really to preserve to the American people that free opportunity in foreign markets which will soon be indispensable to our prosperity, even greater efforts must be made. Otherwise the American merchant, manufacturer, and exporter will find many a field in which American trade should logically predominate preempted through the more energetic efforts of other governments and other commercial nations.

There are many ways in which through hearty cooperation the legislative and executive branches of this Government can do much. The absolute essential is the spirit of united effort and singleness of purpose. I will allude only to a very few specific examples of action which ought then to result. America can not take its proper place in the most important fields for its commercial activity and enterprise unless we have a merchant marine. American commerce and enterprise can not be effectively fostered in those fields unless we have good American banks in the countries referred to. We need American newspapers in those countries and proper means for public information about them. We need to assure the permanency of a trained foreign service. We need legislation enabling the members of the foreign service to be systematically brought in direct contact with the industrial, manufacturing, and exporting interests of this country in order that American business men may enter the foreign field with a clear perception of the exact conditions to be dealt with and the officers themselves may prosecute their work with a clear idea of what American industrial and manufacturing interests require.

CONCLUSION.

Congress should fully realize the conditions which obtain in the world as we find ourselves at the threshold of our middle age as a Nation. We have emerged full grown as a peer in the great concourse of nations. We have passed through various formative periods. We have been self-centered in the struggle to develop our domestic resources and deal with our domestic questions. The Nation is now too mature to continue in its foreign relations those temporary expedients natural to a people to whom domestic affairs are the sole concern. In the past our diplomacy has often consisted, in normal times, in a mere assertion of the right to international existence. We are now in a larger relation with broader rights of our own and

obligations to others than ourselves. A number of great guiding principles were laid down early in the history of this Government. The recent task of our diplomacy has been to adjust those principles to the conditions of to-day, to develop their corollaries, to find practical applications of the old principles expanded to meet new situations. Thus are being evolved bases upon which can rest the superstructure of policies which must grow with the destined progress of this Nation. The successful conduct of our foreign relations demands a broad and a modern view. We can not meet new questions nor build for the future if we confine ourselves to outworn dogmas of the past and to the perspective appropriate at our emergence from colonial times and conditions. The opening of the Panama Canal will mark a new era in our international life and create new and world-wide conditions which, with their vast correlations and consequences, will obtain for hundreds of years to come. We must not wait for events to overtake us unawares. With continuity of purpose we must deal with the problems of our external relations by a diplomacy modern, resourceful, magnanimous, and fittingly expressive of the high ideals of a great nation.

WM. H. TAFT.

THE WHITE HOUSE,
December 3, 1912.

MESSAGE ON FISCAL, JUDICIAL, MILITARY, AND INSULAR AFFAIRS.

To the Senate and House of Representatives:

On the 3d of December I sent a message to the Congress, which was confined to our foreign relations. The Secretary of State makes no report to the President or to Congress, and a review of the history of the transactions of the State Department in one year must therefore be included by the President in his annual message or Congress will not be fully informed of them. A full discussion of all the transactions of the Government, with a view to informing the Congress of the important events of the year and recommending new legislation, requires more space than one message of reasonable length affords. I have therefore adopted the course of sending three or four messages during the first 10 days of the session, so as to include reference to the more important matters that should be brought to the attention of the Congress.

BUSINESS CONDITIONS.

The condition of the country with reference to business could hardly be better. While the four years of the administration now

drawing to a close have not developed great speculative expansion or a wide field of new investment, the recovery and progress made from the depressing conditions following the panic of 1907 have been steady and the improvement has been clear and easily traced in the statistics. The business of the country is now on a solid basis. Credits are not unduly extended, and every phase of the situation seems in a state of preparedness for a period of unexampled prosperity. Manufacturing concerns are running at their full capacity and the demand for labor was never so constant and growing. The foreign trade of the country for this year will exceed $4,000,000,000, while the balance in our favor—that of the excess of exports over imports—will exceed $500,000,000. More than half our exports are manufactures or partly manufactured material, while our exports of farm products do not show the same increase because of domestic consumption. It is a year of bumper crops; the total money value of farm products will exceed $9,500,000,000. It is a year when the bushel or unit price of agricultural products has gradually fallen, and yet the total value of the entire crop is greater by over $1,000,000,000 than we have known in our history.

CONDITION OF THE TREASURY.

The condition of the Treasury is very satisfactory. The total interest-bearing debt is $963,777,770, of which $134,631,980 constitute the Panama Canal loan. The noninterest-bearing debt is $378,301,284.90, including $346,681,016 of greenbacks. We have in the Treasury $150,000,000 in gold coin as a reserve against the outstanding greenbacks; and in addition we have a cash balance in the Treasury as a general fund of $167,152,478.99, or an increase of $26,975,552 over the general fund last year.

RECEIPTS AND EXPENDITURES.

For three years the expenditures of the Government have decreased under the influence of an effort to economize. This year presents an apparent exception. The estimate by the Secretary of the Treasury of the ordinary receipts, exclusive of postal revenues, for the year ending June 30, 1914, indicates that they will amount to $710,000,000. The sum of the estimates of the expenditures for that same year, exclusive of Panama Canal disbursements and postal disbursements payable from postal revenues, is $732,000,000, indicating a deficit of $22,000,000. For the year ending June 30, 1913, similarly estimated receipts were $667,000,000, while the total corresponding estimate of expeditures for that year, submitted through the Secretary of the Treasury to Congress, amounted to $656,000,000. This shows an increase of $76,000,000 in the estimates for 1914 over the total esti-

mates of 1913. This is due to an increase of $25,000,000 in the estimate for rivers and harbors for the next year on projects and surveys authorized by Congress; to an increase under the new pension bill of $32,500,000; and to an increase in the estimates for expenses of the Navy Department of $24,000,000. The estimate for the Navy Department for the year 1913 included two battleships. Congress made provision for only one battleship, and therefore the Navy Department has deemed it necessary and proper to make an estimate which includes the first year's expenditure for three battleships in addition to the amount required for work on the uncompleted ships now under construction. In addition to the natural increase in the expenditures for the uncompleted ships, and the additional battleship estimated for, the other increases are due to the pay required for 4,000 or more additional enlisted men in the Navy; and to this must be added the additional cost of construction imposed by the change in the eight-hour law which makes it applicable to ships built in private shipyards.

With the exceptions of these three items, the estimates show a reduction this year below the total estimates for 1913 of more than $5,000,000.

The estimates for Panama Canal construction for 1914 are $17,000,000 less than for 1913.

OUR BANKING AND CURRENCY SYSTEM.

A time when panics seem far removed is the best time for us to prepare our financial system to withstand a storm. The most crying need this country has is a proper banking and currency system. The existing one is inadequate, and everyone who has studied the question admits it.

It is the business of the National Government to provide a medium, automatically contracting and expanding in volume, to meet the needs of trade. Our present system lacks the indispensable quality of elasticity.

The only part of our monetary medium that has elasticity is the bank-note currency. The peculiar provisions of the law requiring national banks to maintain reserves to meet the call of the depositors operates to increase the money stringency when it arises rather than to expand the supply of currency and relieve it. It operates upon each bank and furnishes a motive for the withdrawal of currency from the channels of trade by each bank to save itself, and offers no inducement whatever for the use of the reserve to expand the supply of currency to meet the exceptional demand.

After the panic of 1907 Congress realized that the present system was not adapted to the country's needs, and that under it panics were

possible that might properly be avoided by legislative provision. Accordingly a monetary commission was appointed, which made a report in February, 1912. The system which they recommended involved a National Reserve Association, which was in certain of its faculties and functions a bank, and which was given through its governing authorities the power, by issuing circulating notes for approved commercial paper, by fixing discounts, and by other methods of transfer of currency, to expand the supply of the monetary medium where it was most needed to prevent the export or hoarding of gold and generally to exercise such supervision over the supply of money in every part of the country as to prevent a stringency and a panic. The stock in this association was to be distributed to the banks of the whole United States, State and National, in a mixed proportion to bank units and to capital stock paid in. The control of the association was vested in a board of directors to be elected by representatives of the banks, except certain ex officio directors, three Cabinet officers, and the Comptroller of the Currency. The President was to appoint the governor of the association from three persons to be selected by the directors, while the two deputy governors were to be elected by the board of directors. The details of the plan were worked out with great care and ability, and the plan in general seems to me to furnish the basis for a proper solution of our present difficulties. I feel that the Government might very properly be given a greater voice in the executive committee of the board of directors without danger of injecting politics into its management, but I think the federation system of banks is a good one, provided proper precautions are taken to prevent banks of large capital from absorbing power through ownership of stock in other banks. The objections to a central bank it seems to me are obviated if the ownership of the reserve association is distributed among all the banks of the country in which banking is free. The earnings of the reserve association are limited in percentage to a reasonable and fixed amount, and the profits over and above this are to be turned into the Government Treasury. It is qnite probable that still greater security against control by money centers may be worked into the plan.

Certain it is, however, that the objections which were made in the past history of this country to a central bank as furnishing a monoply of financial power to private individuals would not apply to an association whose ownership and control is so widely distributed and is divided between all the banks of the country, State and national, on the one hand, and the Chief Executive through three department heads and his Comptroller of the Currency on the other. The ancient hostility to a national bank, with its branches, in which is concentrated the privilege of doing a banking business and carry-

ing on the financial transactions of the Government, has prevented the establishment of such a bank since it was abolished in the Jackson Administration. Our present national banking law has obviated objections growing out of the same cause by providing a free banking system in which any set of stockholders can establish a national bank if they comply with the conditions of law. It seems to me that the National Reserve Association meets the same objection in a similar way; that is, by giving to each bank, State and National, in accordance with its size, a certain share in the stock of the reserve association, nontransferable and only to be held by the bank while it performs its functions as a partner in the reserve association.

The report of the commission recommends provisions for the imposition of a graduated tax on the expanded currency of such a character as to furnish a motive for reducing the issue of notes whenever their presence in the money market is not required by the exigencies of trade. In other words, the whole system has been worked out with the greatest care. Theoretically it presents a plan that ought to command support. Practically it may require modification in various of its provisions in order to make the security against abuses by combinations among the banks impossible. But in the face of the crying necessity that there is for improvement in our present system, I urgently invite the attention of Congress to the proposed plan and the report of the commission, with the hope that an earnest consideration may suggest amendments and changes within the general plan which will lead to its adoption for the benefit of the country. There is no class in the community more interested in a safe and sane banking and currency system, one which will prevent panics and automatically furnish in each trade center the currency needed in the carrying on of the business at that center, than the wage earner. There is no class in the community whose experience better qualifies them to make suggestions as to the sufficiency of a currency and banking system than the bankers and business men. Ought we, therefore, to ignore their recommendations and reject their financial judgment as to the proper method of reforming our financial system merely because of the suspicion which exists against them in the minds of many of our fellow citizens? Is it not the duty of Congress to take up the plan suggested, examine it from all standpoints, give impartial consideration to the testimony of those whose experience ought to fit them to give the best advice on the subject, and then to adopt some plan which will secure the benefits desired?

A banking and currency system seems far away from the wage earner and the farmer, but the fact is that they are vitally interested in a safe system of currency which shall graduate its volume to the

amount needed and which shall prevent times of artificial stringency that frighten capital, stop employment, prevent the meeting of the pay roll, destroy local markets, and produce penury and want.

THE TARIFF.

I have regarded it as my duty in former messages to the Congress to urge the revision of the tariff upon principles of protection. It was my judgment that the customs duties ought to be revised downward, but that the reduction ought not to be below a rate which would represent the difference in the cost of production between the article in question at home and abroad, and for this and other reasons I vetoed several bills which were presented to me in the last session of this Congress. Now that a new Congress has been elected on a platform of a tariff for revenue only rather than a protective tariff, and is to revise the tariff on that basis, it is needless for me to occupy the time of this Congress with arguments or recommendations in favor of a protective tariff.

Before passing from the tariff law, however, known as the Payne tariff law of August 5, 1909, I desire to call attention to section 38 of that act, assessing a special excise tax on corporations. It contains a provision requiring the levy of an additional 50 per cent to the annual tax in cases of neglect to verify the prescribed return or to file it before the time required by law. This additional charge of 50 per cent operates in some cases as a harsh penalty for what may have been a mere inadvertence or unintentional oversight, and the law should be so amended as to mitigate the severity of the charge in such instances. Provision should also be made for the refund of additional taxes heretofore collected because of such infractions in those cases where the penalty imposed has been so disproportionate to the offense as equitably to demand relief.

BUDGET.

The estimates for the next fiscal year have been assembled by the Secretary of the Treasury and by him transmitted to Congress. I purpose at a later day to submit to Congress a form of budget prepared for me and recommended by the President's Commission on Economy and Efficiency, with a view of suggesting the useful and informing character of a properly framed budget.

WAR DEPARTMENT.

The War Department combines within its jurisdiction functions which in other countries usually occupy three departments. It not only has the management of the Army and the coast defenses, but its jurisdiction extends to the government of the Philippines and of

Porto Rico and the control of the receivership of the customs revenues of the Dominican Republic; it also includes the recommendation of all plans for the improvement of harbors and waterways and their execution when adopted; and, by virtue of an Executive order, the supervision of the construction of the Panama Canal.

ARMY REORGANIZATION.

Our small Army now consists of 83,809 men, excluding the 5,000 Philippine Scouts. Leaving out of consideration the Coast Artillery force, whose position is fixed in our various seacoast defenses, and the present garrisons of our various insular possessions, we have to-day within the continental United States a mobile Army of only about 35,000 men. This little force must be still further drawn upon to supply the new garrisons for the great naval base which is being established at Pearl Harbor, in the Hawaiian Islands, and to protect the locks now rapidly approaching completion at Panama. The forces remaining in the United States are now scattered in nearly 50 posts, situated for a variety of historical reasons in 24 States. These posts contain only fractions of regiments, averaging less than 700 men each. In time of peace it has been our historical policy to administer these units separately by a geographical organization. In other words, our Army in time of peace has never been a united organization, but merely scattered groups of companies, battalions, and regiments, and the first task in time of war has been to create out of these scattered units an Army fit for effective teamwork and cooperation.

To the task of meeting these patent defects, the War Department has been addressing itself during the past year. For many years we had no officer or division whose business it was to study these problems and plan remedies for these defects. With the establishment of the General Staff nine years ago a body was created for this purpose. It has, necessarily, required time to overcome, even in its own personnel, the habits of mind engendered by a century of lack of method, but of late years its work has become systematic and effective, and it has recently been addressing itself vigorously to these problems.

A comprehensive plan of Army reorganization was prepared by the War College Division of the General Staff. This plan was thoroughly discussed last summer at a series of open conferences held by the Secretary of War and attended by representatives from all branches of the Army and from Congress. In printed form it has been distributed to Members of Congress and throughout the Army and the National Guard, and widely through institutions of learning and elsewhere in the United States. In it, for the first time, we have a tentative chart for future progress.

Under the influence of this study definite and effective steps have been taken toward Army reorganization so far as such reorganization lies within the Executive power. Hitherto there has been no difference of policy in the treatment of the organization of our foreign garrisons from those of troops within the United States. The difference of situation is vital, and the foreign garrison should be prepared to defend itself at an instant's notice against a foe who may command the sea. Unlike the troops in the United States, it can not count upon reenforcements or recruitment. It is an outpost upon which will fall the brunt of the first attack in case of war. The historical policy of the United States of carrying its regiments during time of peace at half strength has no application to our foreign garrisons. During the past year this defect has been remedied as to the Philippines garrison. The former garrison of 12 reduced regiments has been replaced by a garrison of 6 regiments at full strength, giving fully the same number of riflemen at an estimated economy in cost of maintenance of over $1,000,000 per year. This garrison is to be permanent. Its regimental units, instead of being transferred periodically back and forth from the United States, will remain in the islands. The officers and men composing these units will, however, serve a regular tropical detail as usual, thus involving no greater hardship upon the personnel and greatly increasing the effectiveness of the garrison. A similar policy is proposed for the Hawaiian and Panama garrisons as fast as the barracks for them are completed. I strongly urge upon Congress that the necessary appropriations for this purpose should be promptly made. It is, in my opinion, of first importance that these national outposts, upon which a successful home defense will, primarily, depend, should be finished and placed in effective condition at the earliest possible day.

THE HOME ARMY.

Simultaneously with the foregoing steps the War Department has been proceeding with the reorganization of the Army at home. The formerly disassociated units are being united into a tactical organization of three divisions, each consisting of two or three brigades of Infantry, and, so far as practicable, a proper proportion of divisional Cavalry and Artillery. Of course the extent to which this reform can be carried by the Executive is practically limited to a paper organization. The scattered units can be brought under a proper organization, but they will remain physically scattered until Congress supplies the necessary funds for grouping them in more concentrated posts. Until that is done the present difficulty of drilling our scattered groups together, and thus training them for the proper team play, can not be removed. But we shall, at least, have an Army which will know its own organization and will be inspected

by its proper commanders, and to which, as a unit, emergency orders can be issued in time of war or other emergency. Moreover, the organization, which in many respects is necessarily a skeleton will furnish a guide for future development. The separate regiments and companies will know the brigades and divisions to which they belong. They will be maneuvered together whenever maneuvers are established by Congress, and the gaps in their organization will show the pattern into which can be filled new troops as the Nation grows and a larger Army is provided.

REGULAR ARMY RESERVE.

One of the most important reforms accomplished during the past year has been the legislation enacted in the Army appropriation bill of last summer, providing for a Regular Army reserve. Hitherto our national policy has assumed that at the outbreak of war our regiments would be immediately raised to full strength. But our laws have provided no means by which this could be accomplished or by which the losses of the regiments when once sent to the front could be repaired. In this respect we have neglected the lessons learned by other nations. The new law provides that the soldier, after serving four years with colors, shall pass into a reserve for three years. At his option he may go into the reserve at the end of three years, remaining there for four years. While in the reserve he can be called to active duty only in case of war or other national emergency, and when so called and only in such case will receive a stated amount of pay for all of the period in which he has been a member of the reserve. The legislation is imperfect, in my opinion, in certain particulars, but it is a most important step in the right direction, and I earnestly hope that it will be carefully studied and perfected by Congress.

THE NATIONAL GUARD.

Under existing law the National Guard constitutes, after the Regular Army, the first line of national defense. Its organization, discipline, training, and equipment, under recent legislation, have been assimilated, as far as possible, to those of the Regular Army, and its practical efficiency, under the effect of this training, has very greatly increased. Our citizen soldiers under present conditions have reached a stage of development beyond which they can not reasonably be asked to go without further direct assistance in the form of pay from the Federal Government. On the other hand, such pay from the National Treasury would not be justified unless it produced a proper equivalent in additional efficiency on the part of the National Guard. The Organized Militia to-day can not be ordered outside of

the limits of the United States, and thus can not lawfully be used for general military purposes. The officers and men are ambitious and eager to make themselves thus available and to become an efficient national reserve of citizen soldiery. They are the only force of trained men, other than the Regular Army, upon which we can rely. The so-called militia pay bill, in the form agreed on between the authorities of the War Department and the representatives of the National Guard, in my opinion adequately meets these conditions and offers a proper return for the pay which it is proposed to give to the National Guard. I believe that its enactment into law would be a very long step toward providing this Nation with a first line of citizen soldiery, upon which its main reliance must depend in case of any national emergency. Plans for the organization of the National Guard into tactical divisions, on the same lines as those adopted for the Regular Army, are being formulated by the War College Division of the General Staff.

NATIONAL VOLUNTEERS.

The National Guard consists of only about 110,000 men. In any serious war in the past it has always been necessary, and in such a war in the future it doubtless will be necessary, for the Nation to depend, in addition to the Regular Army and the National Guard, upon a large force of volunteers. There is at present no adequate provision of law for the raising of such a force. There is now pending in Congress, however, a bill which makes such provision, and which I believe is admirably adapted to meet the exigencies which would be presented in case of war. The passage of the bill would not entail a dollar's expense upon the Government at this time or in the future until war comes. But if war comes, the methods therein directed are in accordance with the best military judgment as to what they ought to be, and the act would prevent the necessity for a discussion of any legislation and the delays incident to its consideration and adoption. I earnestly urge its passage.

CONSOLIDATION OF THE SUPPLY COSTS.

The Army appropriation act of 1912 also carried legislation for the consolidation of the Quartermaster's Department, the Subsistence Department, and the Pay Corps into a single supply department, to be known as the Quartermaster's Corps. It also provided for the organization of a special force of enlisted men, to be known as the Service Corps, gradually to replace many of the civilian employees engaged in the manual labor necessary in every army. I believe that both of these enactments will improve the administration of our Military Establishment. The consolidation of the Supply Corps

has already been effected, and the organization of the Service Corps is being put into effect.

All of the foregong reforms are in the direction of economy and efficiency. Except for the slight increase necessary to garrison our outposts in Hawaii and Panama, they do not call for a larger Army, but they do tend to produce a much more efficient one. The only substantial new appropriations required are those which, as I have pointed out, are necessary to complete the fortifications and barracks at our naval bases and outposts beyond the sea.

PORTO RICO.

Porto Rico continues to show notable progress, both commercially and in the spread of education. Its external commerce has increased 17 per cent over the preceding year, bringing the total value up to $92,631,886, or more than five times the value of the commerce of the island in 1901. During the year 160,657 pupils were enrolled in the public schools, as against 145,525 for the preceding year, and as compared with 26,000 for the first year of American administration. Special efforts are under way for the promotion of vocational and industrial training, the need of which is particularly pressing in the island. When the bubonic plague broke out last June, the quick and efficient response of the people of Porto Rico to the demands of modern sanitation was strikingly shown by the thorough campaign which was instituted against the plague and the hearty public opinion which supported the Government's efforts to check its progress and to prevent its recurrence.

The failure thus far to grant American citizenship continues to be the only ground of dissatisfaction. The bill conferring such citizenship has passed the House of Representatives and is now awaiting the action of the Senate. I am heartily in favor of the passage of this bill. I believe that the demand for citizenship is just, and that it is amply earned by sustained loyalty on the part of the inhabitants of the island. But it should be remembered that the demand must be, and in the minds of most Porto Ricans is, entirely disassociated from any thought of statehood. I believe that no substantial approved public opinion in the United States or in Porto Rico contemplates statehood for the island as the ultimate form of relation between us. I believe that the aim to be striven for is the fullest possible allowance of legal and fiscal self-government, with American citizenship as the bond between us; in other words, a relation analogous to the present relation between Great Britain and such self-governing colonies as Canada and Australia. This would conduce to the fullest and most self-sustaining development of Porto Rico, while at the same time it would grant her the economic and political benefits of being under the American flag.

PHILIPPINES.

A bill is pending in Congress which revolutionizes the carefully worked out scheme of government under which the Philippine Islands are now governed and which proposes to render them virtually autonomous at once and absolutely independent in eight years. Such a proposal can only be founded on the assumption that we have now discharged our trusteeship to the Filipino people and our responsibility for them to the world, and that they are now prepared for self-government as well as national sovereignty. A thorough and unbiased knowledge of the facts clearly shows that these assumptions are absolutely without justification. As to this, I believe that there is no substantial difference of opinion among any of those who have had the responsibility of facing Philippine problems in the administration of the islands, and I believe that no one to whom the future of this people is a responsible concern can countenance a policy fraught with the direst consequences to those on whose behalf it is ostensibly urged.

In the Philippine Islands we have embarked upon an experiment unprecedented in dealing with dependent peoples. We are developing there conditions exclusively for their own welfare. We found an archipelago containing 24 tribes and races, speaking a great variety of languages, and with a population over 80 per cent of which could neither read nor write. Through the unifying forces of a common education, of commercial and economic development, and of gradual participation in local self-government we are endeavoring to evolve a homogeneous people fit to determine, when the time arrives, their own destiny. We are seeking to arouse a national spirit and not, as under the older colonial theory, to suppress such a spirit. The character of the work we have been doing is keenly recognized in the Orient, and our success thus far followed with not a little envy by those who, initiating the same policy, find themselves hampered by conditions grown up in earlier days and under different theories of administration. But our work is far from done. Our duty to the Filipinos is far from discharged. Over half a million Filipino students are now in the Philippine schools helping to mold the men of the future into a homogeneous people, but there still remain more than a million Filipino children of school age yet to be reached. Freed from American control, the integrating forces of a common education and a common language will cease and the educational system now well started will slip back into inefficiency and disorder.

An enormous increase in the commercial development of the islands has been made since they were virtually granted full access to our markets three years ago, with every prospect of increasing

development and diversified industries. Freed from American control such development is bound to decline. Every observer speaks of the great progress in public works for the benefit of the Filipinos, of harbor improvements, of roads and railways, of irrigation and artesian wells, public buildings, and better means of communication. But large parts of the islands are still unreached, still even unexplored, roads and railways are needed in many parts, irrigation systems are still to be installed, and wells to be driven. Whole villages and towns are still without means of communication other than almost impassable roads and trails. Even the great progress in sanitation, which has successfully suppressed smallpox, the bubonic plague, and Asiatic cholera, has found the cause of and a cure for beriberi, has segregated the lepers, has helped to make Manila the most healthful city in the Orient, and to free life throughout the whole archipelago from its former dread diseases, is nevertheless incomplete in many essentials of permanence in sanitary policy. Even more remains to be accomplished. If freed from American control sanitary progress is bound to be arrested and all that has been achieved likely to be lost.

Concurrent with the economic, social, and industrial development of the islands has been the development of the political capacity of the people. By their progressive participation in government the Filipinos are being steadily and hopefully trained for self-government. Under Spanish control they shared in no way in the government. Under American control they have shared largely and increasingly. Within the last dozen years they have gradually been given complete autonomy in the municipalities, the right to elect two-thirds of the provincial governing boards and the lower house of the insular legislature. They have four native members out of nine members of the commission, or upper house. The chief justice and two justices of the supreme court, about one-half of the higher judicial positions, and all of the justices of the peace are natives. In the classified civil service the proportion of Filipinos increased from 51 per cent in 1904 to 67 per cent in 1911. Thus to-day all the municipal employees, over 90 per cent of the provincial employees, and 60 per cent of the officials and employees of the central government are Filipinos. The ideal which has been kept in mind in our political guidance of the islands has been real popular self-government and not mere paper independence. I am happy to say that the Filipinos have done well enough in the places they have filled and in the discharge of the political power with which they have been intrusted to warrant the belief that they can be educated and trained to complete self-government. But the present satisfactory results are due to constant support and supervision at every step by Americans.

If the task we have undertaken is higher than that assumed by other nations, its accomplishment must demand even more patience. We must not forget that we found the Filipinos wholly untrained in government. Up to our advent all other experience sought to repress rather than encourage political power. It takes long time and much experience to ingrain political habits of steadiness and efficiency. Popular self-government ultimately must rest upon common habits of thought and upon a reasonably developed public opinion. No such foundations for self-government, let alone independence, are now present in the Philippine Islands. Disregarding even their racial heterogeneity and the lack of ability to think as a nation, it is sufficient to point out that under liberal franchise privileges only about 3 per cent of the Filipinos vote and only 5 per cent of the people are said to read the public press. To confer independence upon the Filipinos now is, therefore, to subject the great mass of their people to the dominance of an oligarchical and, probably, exploiting minority. Such a course will be as cruel to those people as it would be shameful to us.

Our true course is to pursue steadily and courageously the path we have thus far followed; to guide the Filipinos into self-sustaining pursuits; to continue the cultivation of sound political habits through education and political practice; to encourage the diversification of industries, and to realize the advantages of their industrial education by conservatively approved cooperative methods, at once checking the dangers of concentrated wealth and building up a sturdy, independent citizenship. We should do all this with a disinterested endeavor to secure for the Filipinos economic independence and to fit them for complete self-government, with the power to decide eventually, according to their own largest good, whether such self-government shall be accompanied by independence. A present declaration even of future independence would retard progress by the dissension and disorder it would arouse. On our part it would be a disingenuous attempt, under the guise of conferring a benefit on them, to relieve ourselves from the heavy and difficult burden which thus far we have been bravely and consistently sustaining. It would be a disguised policy of scuttle. It would make the helpless Filipino the football of oriental politics, under the protection of a guaranty of their independence, which we would be powerless to enforce.

REGULATION OF WATER POWER.

There are pending before Congress a large number of bills proposing to grant privileges of erecting dams for the purpose of creating water power in our navigable rivers. The pendency of these bills has brought out an important defect in the existing general dam act.

That act does not, in my opinion, grant sufficient power to the Federal Government in dealing with the construction of such dams to exact protective conditions in the interest of navigation. It does not permit the Federal Government, as a condition of its permit, to require that a part of the value thus created shall be applied to the further general improvement and protection of the stream. I believe this to be one of the most important matters of internal improvement now confronting the Government. Most of the navigable rivers of this country are comparatively long and shallow. In order that they may be made fully useful for navigation there has come into vogue a method of improvement known as canalization, or the slack-water method, which consists in building a series of dams and locks, each of which will create a long pool of deep navigable water. At each of these dams there is usually created also water power of commercial value. If the water power thus created can be made available for the further improvement of navigation in the stream, it is manifest that the improvement will be much more quickly effected on the one hand, and, on the other, that the burden on the general taxpayers of the country will be very much reduced. Private interests seeking permits to build water-power dams in navigable streams usually urge that they thus improve navigation, and that if they do not impair navigation they should be allowed to take for themselves the entire profits of the water-power development. Whatever they may do by way of relieving the Government of the expense of improving navigation should be given due consideration, but it must be apparent that there may be a profit beyond a reasonably liberal return upon the private investment which is a potential asset of the Government in carrying out a comprehensive policy of waterway development. It is no objection to the retention and use of such an asset by the Government that a comprehensive waterway policy will include the protection and development of the other public uses of water, which can not and should not be ignored in making and executing plans for the protection and development of navigation. It is also equally clear that inasmuch as the water power thus created is or may be an incident of a general scheme of waterway improvement within the constitutional jurisdiction of the Federal Government, the regulation of such water power lies also within that jurisdiction. In my opinion constructive statesmanship requires that legislation should be enacted which will permit the development of navigation in these great rivers to go hand in hand with the utilization of this by-product of water power, created in the course of the same improvement, and that the general dam act should be so amended as to make this possible. I deem it highly important that the Nation should adopt a consistent and harmonious treatment of these water-power projects, which will preserve for this purpose their value to the

Government, whose right it is to grant the permit. Any other policy is equivalent to throwing away a most valuable national asset.

THE PANAMA CANAL.

During the past year the work of construction upon the canal has progressed most satisfactorily. About 87 per cent of the excavation work has been completed, and more than 93 per cent of the concrete for all the locks is in place. In view of the great interest which has been manifested as to some slides in the Culebra Cut, I am glad to say that the report of Col. Goethals should allay any apprehension on this point. It is gratifying to note that none of the slides which occurred during this year would have interfered with the passage of the ships had the canal, in fact, been in operation, and when the slope pressures will have been finally adjusted and the growth of vegetation will minimize erosion in the banks of the cut, the slide problem will be practically solved and an ample stability assured for the Culebra Cut.

Although the official date of the opening has been set for January 1, 1915, the canal will, in fact, from present indications, be opened for shipping during the latter half of 1913. No fixed date can as yet be set, but shipping interests will be advised as soon as assurances can be given that vessels can pass through without unnecessary delay.

Recognizing the administrative problem in the management of the canal, Congress, in the act of August 24, 1912, has made admirable provisions for executive responsibility in the control of the canal and the government of the Canal Zone. The problem of most efficient organization is receiving careful consideration, so that a scheme of organization and control best adapted to the conditions of the canal may be formulated and put in operation as expeditiously as possible. Acting under the authority conferred on me by Congress, I have, by Executive proclamation, promulgated the following schedule of tolls for ships passing through the canal, based upon the thorough report of Emory R. Johnson, special commissioner on traffic and tolls:

1. On merchant vessels carrying passengers or cargo, $1.20 per net vessel ton—each 100 cubic feet—of actual earning capacity.

2. On vessels in ballast without passengers or cargo, 40 per cent less than the rate of tolls for vessels with passengers or cargo.

3. Upon naval vessels, other than transports, colliers, hospital ships, and supply ships, 50 cents per displacement ton.

4. Upon Army and Navy transports, colliers, hospital ships, and supply ships, $1.20 per net ton, the vessels to be measured by the same rules as are employed in determining the net tonnage of merchant vessels.

Rules for the determination of the tonnage upon which toll charges are based are now in course of preparation and will be promulgated in due season.

PANAMA CANAL TREATY

The proclamation which I have issued in respect to the Panama Canal tolls is in accord with the Panama Canal act passed by this Congress August 24, 1912. We have been advised that the British Government has prepared a protest against the act and its enforcement in so far as it relieves from the payment of tolls American ships engaged in the American coastwise trade on the ground that it violates British rights under the Hay-Pauncefote treaty concerning the Panama Canal. When the protest is presented, it will be promptly considered and an effort made to reach a satisfactory adjustment of any differences there may be between the two Governments.

WORKMEN'S COMPENSATION ACT.

The promulgation of an efficient workmen's compensation act, adapted to the particular conditions of the zone, is availing adequate appropriation by Congress for the payment of claims arising thereunder. I urge that speedy provision be made in order that we may install upon the zone a system of settling claims for injuries in best accord with modern humane, social, and industrial theories.

PROMOTION FOR COL. GOETHALS.

As the completion of the canal grows nearer, and as the wonderful executive work of Col. Goethals becomes more conspicuous in the eyes of the country and of the world, it seems to me wise and proper to make provision by law for such reward to him as may be commensurate with the service that he has rendered to his country. I suggest that this reward take the form of an appointment of Col. Goethals as a major general in the Army of the United States, and that the law authorizing such appointment be accompanied with a provision permitting his designation as Chief of Engineers upon the retirement of the present incumbent of that office.

NAVY DEPARTMENT.

The Navy of the United States is in a greater state of efficiency and is more powerful than it has ever been before, but in the emulation which exists between different countries in respect to the increase of naval and military armaments this condition is not a permanent one. In view of the many improvements and increases by foreign Governments, the slightest halt on our part in respect to new construction throws us back and reduces us from a naval power of the first rank and places us among the nations of the second rank. In the past 15 years the Navy has evxpanded rapidly, and yet far less rapidly than our country. From now on reduced expenditures in the Navy

means reduced military strength. The world's history has shown the importance of sea power both for adequate defense and for the support of important and definite policies.

I had the pleasure of attending this autumn a mobilization of the Atlantic Fleet, and was glad to observe and note the preparedness of the fleet for instant action. The review brought before the President and the Secretary of the Navy a greater and more powerful collection of vessels than had ever been gathered in American waters. The condition of the fleet and of the officers and enlisted men and of the equipment of the vessels entitled those in authority to the greatest credit.

I again commend to Congress the giving of legislative sanction to the appointment of the naval aids to the Secretary of the Navy. These aids and the council of aids appointed by the Secretary of the Navy to assist him in the conduct of his department have proven to be of the highest utility. They have furnished an executive committee of the most skilled naval experts, who have coordinated the action of the various bureaus in the Navy, and by their advice have enabled the secretary to give an administration at the same time economical and most efficient. Never before has the United States had a Navy that compared in efficiency with its present one, but never before have the requirements with respect to naval warfare been higher and more exacting than now. A year ago Congress refused to appropriate for more than one battleship. In this I think a great mistake of policy was made, and I urgently recommend that this Congress make up for the mistake of the last session by appropriations authorizing the construction of three battleships, in addition to destroyers, fuel ships, and the other auxiliary vessels as shown in the building program of the general board. We are confronted by a condition in respect to the navies of the world which requires us, if we would maintain our Navy as an insurance of peace, to augment our naval force by at least two battleships a year and by battle cruisers, gunboats, torpedo destroyers, and submarine boats in a proper proportion. We have no desire for war. We would go as far as any nation in the world to avoid war, but we are a world power. Our population, our wealth, our definite policies, our responsibilities in the Pacific and the Atlantic, our defense of the Panama Canal, together with our enormous world trade and our missionary outposts on the frontiers of civilization, require us to recognize our position as one of the foremost in the family of nations, and to clothe ourselves with sufficient naval power to give force to our reasonable demands and to give weight to our influence in those directions of progress that a powerful Christian nation should advocate.

I observe that the Secretary of the Navy devotes some space to a change in the disciplinary system in vogue in that branch of the service. I think there is nothing quite so unsatisfactory to either the Army or the Navy as the severe punishments necessarily inflicted by court-martial for desertions and purely military offenses, and I am glad to hear that the British have solved this important and difficult matter in a satisfactory way. I commend to the consideration of Congress the details of the new disciplinary system, and recommend that laws be passed putting the same into force both in the Army and the Navy.

I invite the attention of Congress to that part of the report of the Secretary of the Navy in which he recommends the formation of a naval reserve by the organization of the ex-sailors of the Navy.

I repeat my recommendation made last year that proper provision should be made for the rank of the commander in chief of the squadrons and fleets of the Navy. The inconvenience attending the necessary precedence that most foreign admirals have over our own whenever they meet in official functions ought to be avoided. It impairs the prestige of our Navy and is a defect that can be very easily removed.

DEPARTMENT OF JUSTICE.

This department has been very active in the enforcement of the law. It has been better organized and with a larger force than ever before in the history of the Government. The prosecutions which have been successfully concluded and which are now pending testify to the effectiveness of the departmental work.

The prosecution of trusts under the Sherman antitrust law has gone on without restraint or diminution, and decrees similar to those entered in the Standard Oil and Tobacco cases have been entered in other suits, like the suits against the Powder Trust and the Bathtub Trust. I am very strongly convinced that a steady, consistent course in this regard, with a continuing of Supreme Court decisions upon new phases of the trust question not already finally decided is going to offer a solution of this much-discussed and troublesome issue in a quiet, calm, and judicial way, without any radical legislation changing the governmental policy in regard to combinations now denounced by the Sherman antitrust law. I have already recommended as an aid in this matter legislation which would declare unlawful certain well-known phases of unfair competition in interstate trade, and I have also advocated voluntary national incorporation for the larger industrial enterprises, with provision for a closer supervision by the Bureau of Corporations, or a board appointed for the purpose, so as to make more certain compliance with the antitrust law on the one hand and to give greater security to the stockholders against possible prosecutions on the other. I believe,

however, that the orderly course of litigation in the courts and the regular prosecution of trusts charged with the violation of the anti-trust law is producing among business men a clearer and clearer perception of the line of distinction between business that is to be encouraged and business that is to be condemned, and that in this quiet way the question of trusts can be settled and competition retained as an economic force to secure reasonableness in prices and freedom and independence in trade.

REFORM OF COURT PROCEDURE.

I am glad to bring to the attention of Congress the fact that the Supreme Court has radically altered the equity rules governing the procedure on the equity side of all Federal courts, and though, as these changes have not been yet put in practice so as to enable us to state from actual results what the reform will accomplish, they are of such a character that we can reasonably prophesy that they will greatly reduce the time and so full of appreciation of the necessity for a great reform many of the shorter methods of the present English procedure, and while it may take a little while for the profession to accustom itself to these methods, it is certain greatly to facilitate litigation. The action of the Supreme Court has been so drastic and so full of appreciation of the necessity for a great reform in court procedure that I have no hesitation in following up this action with a recommendation which I foreshadowed in my message of three years ago, that the sections of the statute governing the procedure in the Federal courts on the common-law side should be so amended as to give to the Supreme Court the same right to make rules of procedure in common law as they have, since the beginning of the court, exercised in equity. I do not doubt that a full consideration of the subject will enable the court while giving effect to the substantial differences in right and remedy between the system of common law and the system of equity so to unite the two procedures into the form of one civil action and to shorten the procedure in such civil action as to furnish a model to all the State courts exercising concurrent jurisdiction with the Federal courts of first instance.

Under the statute now in force the common-law procedure in each Federal court is made to conform to the procedure in the State in which the court is held. In these days, when we should be making progress in court procedure, such a conformity statute makes the Federal method too dependent upon the action of State legislatures. I can but think it a great opportunity for Congress to intrust to the highest tribunal in this country, evidently imbued with a strong spirit in favor of a reform of procedure, the power to frame

a model code of procedure, which, while preserving all that is valuable and necessary of the rights and remedies at common law and in equity, shall lessen the burden of the poor litigant to a minimum in the expedition and cheapness with which his cause can be fought or defended through Federal courts to final judgment.

WORKMAN'S COMPENSATION ACT.

The workman's compensation act reported by the special commission appointed by Congress and the Executive, which passed the Senate and is now pending in the House, the passage of which I have in previous messages urged upon Congress, I venture again to call to its attention. The opposition to it which developed in the Senate, but which was overcome by a majority in that body, seemed to me to grow out rather of a misapprehension of its effect than of opposition to its principle. I say again that I think no act can have a better effect directly upon the relations between the employer and employee than this act applying to railroads and common carriers of an interstate character, and I am sure that the passage of the act would greatly relieve the courts of the heaviest burden of litigation that they have, and would enable them to dispatch other business with a speed never before attained in courts of justice in this country.

WM. H. TAFT.

THE WHITE HOUSE,
December 6, 1912.

MESSAGE CONCERNING THE WORK OF THE DEPARTMENTS OF THE POST OFFICE, INTERIOR, AGRICULTURE, AND COMMERCE AND LABOR, AND DISTRICT OF COLUMBIA AFFAIRS.

To the Senate and House of Representatives:

This is the third of a series of messages in which I have brought to the attention of the Congress the important transactions of the Government in each of its departments during the last year and have discussed needed reforms.

HEADS OF DEPARTMENTS SHOULD HAVE SEATS ON THE FLOOR OF CONGRESS.

I recommend the adoption of legislation which shall make it the duty of heads of departments—the members of the President's Cabinet—at convenient times to attend the session of the House and the Senate, which shall provide seats for them in each House, and give them the opportunity to take part in all discussions and to

answer questions of which they have had due notice. The rigid holding apart of the executive and the legislative branches of this Government has not worked for the great advantage of either. There has been much lost motion in the machinery, due to the lack of cooperation and interchange of views face to face between the representatives of the Executive and the Members of the two legislative branches of the Government. It was never intended that they should be separated in the sense of not being in constant effective touch and relationship to each other. The legislative and the executive each performs its own appropriate function, but these functions must be coordinated. Time and time again debates have arisen in each House upon issues which the information of a particular department head would have enabled him, if present, to end at once by a simple explanation or statement. Time and time again a forceful and earnest presentation of facts and arguments by the representative of the Executive whose duty it is to enforce the law would have brought about a useful reform by amendment, which in the absence of such a statement has failed of passage. I do not think I am mistaken in saying that the presence of the members of the Cabinet on the floor of each House would greatly contribute to the enactment of beneficial legislation. Nor would this in any degree deprive either the legislative or the executive of the independence which separation of the two branches has been intended to promote. It would only facilitate their cooperation in the public interest.

On the other hand, I am sure that the necessity and duty imposed upon department heads of appearing in each House and in answer to searching questions, of rendering upon their feet an account of what they have done, or what has been done by the administration, will spur each member of the Cabinet to closer attention to the details of his department, to greater familiarity with its needs, and to greater care to avoid the just criticism which the answers brought out in questions put and discussions arising between the Members of either House and the members of the Cabinet may properly evoke.

Objection is made that the members of the administration having no vote could exercise no power on the floor of the House, and could not assume that attitude of authority and control which the English parliamentary Government have and which enables them to meet the responsibilities the English system thrusts upon them. I agree that in certain respects it would be more satisfactory if members of the Cabinet could at the same time be Members of both Houses, with voting power, but this is impossible under our system; and while a lack of this feature may detract from the influence of the department chiefs, it will not prevent the good results which I have described above both in the matter of legislation and in the matter of administration. The enactment of such a

law would be quite within the power of Congress without constitutional amendment, and it has such possibilities of usefulness that we might well make the experiment, and if we are disappointed the misstep can be easily retraced by a repeal of the enabling legislation.

This is not a new proposition. In the House of Representatives, in the Thirty-eighth Congress, the proposition was referred to a select committee of seven Members. The committee made an extensive report, and urged the adoption of the reform. The report showed that our history had not been without illustration of the necessity and the examples of the practice by pointing out that in early days Secretaries were repeatedly called to the presence of either House for consultation, advice, and information. It also referred to remarks of Mr. Justice Story in his Commentaries on the Constitution, in which he urgently presented the wisdom of such a change. This report is to be found in Volume I of the Reports of Committees of the First Session of the Thirty-eighth Congress, April 6, 1864.

Again, on February 4, 1881, a select committee of the Senate recommended the passage of a similar bill, and made a report, in which, while approving the separation of the three branches, the executive, legislative, and judicial, they point out as a reason for the proposed change that, although having a separate existence, the branches are "to cooperate, each with the other, as the different members of the human body must cooperate with each other in order to form the figure and perform the duties of a perfect man."

The report concluded as follows:

"This system will require the selection of the strongest men to be heads of departments and will require them to be well equipped with the knowledge of their offices. It will also require the strongest men to be the leaders of Congress and participate in debate. It will bring these strong men in contact, perhaps into conflict, to advance the public weal, and thus stimulate their abilities and their efforts, and will thus assuredly result to the good of the country.

"If it should appear by actual experience that the heads of departments in fact have not time to perform the additional duty imposed on them by this bill, the force in their offices should be increased or the duties devolving on them personally should be diminished. An undersecretary should be appointed to whom could be confided that routine of administration which requires only order and accuracy. The principal officers could then confine their attention to those duties which require wise discretion and intellectual activity. Thus they would have abundance of time for their duties under this bill. Indeed, your committee believes that the public interest would be subserved if the Secretaries were relieved of the harassing cares of distributing clerkships and closely supervising the mere machinery of the departments. Your committee believes that the adoption of this bill and the effective execution of its provisions will be the first step toward a sound civil-service reform which will secure a larger

wisdom in the adoption of policies and a better system in their execution.

(Signed) "GEO. H. PENDLETON.
"W. B. ALLISON.
"D. W. VOORHEES.
"J. G. BLAINE.
"M. C. BUTLER.
"JOHN J. INGALLS.
"O. H. PLATT.
"J. T. FARLEY."

It would be difficult to mention the names of higher authority in the practical knowledge of our Government than those which are appended to this report.

POSTAL SAVINGS BANK SYSTEM.

The Postal Savings Bank System has been extended so that it now includes 4,004 fourth-class post offices, as well as 645 branch offices and stations in the larger cities. There are now 12,812 depositories at which patrons of the system may open accounts. The number of depositors is 300,000 and the amount of their deposits is approximately $28,000,000, not including $1,314,140 which has been withdrawn by depositors for the purpose of buying postal savings bonds. Experience demonstrates the value of dispensing with the pass book and introducing in its place a certificate of deposit. The gross income of the postal savings system for the fiscal year ending June 30, 1913, will amount to $700,000 and the interest payable to depositors to $300,000. The cost of supplies, equipment, and salaries is $700,000. It thus appears that the system lacks $300,000 a year of paying interest and expenses. It is estimated, however, that when the deposits have reached the sum of $50,000,000, which at the present rate they soon will do, the system will be self-sustaining. By law the postal savings funds deposited at each post office are required to be redeposited in local banks. State and national banks to the number of 7,357 have qualified as depositories for these funds. Such deposits are secured by bonds aggregating $54,000,000. Of this amount, $37,000,000 represent municipal bonds.

PARCEL POST.

In several messages I have favored and recommended the adoption of a system of parcel post. In the postal appropriation act of last year a general system was provided and its installation was directed by the 1st of January. This has entailed upon the Post Office Department a great deal of very heavy labor, but the Postmaster General informs me that on the date selected, to wit, the 1st of

January, near at hand, the department will be in readiness to meet successfully the requirements of the public.

CLASSIFICATION OF POSTMASTERS.

A trial, during the past three years, of the system of classifying fourth-class postmasters in that part of the country lying between the Mississippi River on the west, Canada on the north, the Atlantic Ocean on the east, and Mason and Dixon's line on the south has been sufficiently satisfactory to justify the postal authorities in recommending the extension of the order to include all the fourth-class postmasters in the country. In September, 1912, upon the suggestion of the Postmaster General, I directed him to prepare an order which should put the system in effect, except in Alaska, Guam, Hawaii, Porto Rico, and Samoa. Under date of October 15 I issued such an order which affected 36,000 postmasters. By the order the post offices were divided into groups A and B. Group A includes all postmasters whose compensation is $500 or more, and group B those whose compensation is less than that sum. Different methods are pursued in the selection of the postmasters for group A and group B. Criticism has been made of this order on the ground that the motive for it was political. Nothing could be further from the truth. The order was made before the election and in the interest of efficient public service. I have several times requested Congress to give me authority to put first, second, and third class postmasters, and all other local officers, including internal-revenue officers, customs officers, United States marshals, and the local agents of the other departments under the classification of the civil-service law by taking away the necessity for confirming such appointments by the Senate. I deeply regret the failure of Congress to follow these recommendations. The change would have taken out of politics practically every local officer and would have entirely cured the evils growing out of what under the present law must always remain a remnant of the spoils system.

COMPENSATION TO RAILWAYS FOR CARRYING MAILS.

It is expected that the establishment of a parcel post on January 1 will largely increase the amount of mail matter to be transported by the railways, and Congress should be prompt to provide a way by which they may receive the additional compensation to which they will be entitled. The Postmaster General urges that the department's plan for a complete readjustment of the system of paying the railways for carrying the mails be adopted, substituting space for weight as the principal factor in fixing compensation. Under this plan it will be possible to determine without delay what addi-

tional payment should be made on account of the parcel post. The Postmaster General's recommendation is based on the results of a far-reaching investigation begun early in the administration with the object of determining what it costs the railways to carry the mails. The statistics obtained during the course of the inquiry show that while many of the railways, and particularly the larger systems, were making profits from mail transportation, certain of the lines were actually carrying the mails at a loss. As a result of the investigation the department, after giving the subject careful consideration, decided to urge the abandonment of the present plan of fixing compensation on the basis of the weight of the mails carried, a plan that has proved to be exceedingly expensive and in other respects unsatisfactory. Under the method proposed the railway companies will annually submit to the department reports showing what it costs them to carry the mails, and this cost will be apportioned on the basis of the car space engaged, payment to be allowed at the rate thus determined in amounts that will cover the cost and a reasonable profit. If a railway is not satisfied with the manner in which the department apportions the cost in fixing compensation, it is to have the right, under the new plan, of appealing to the Interstate Commerce Commission. This feature of the proposed law would seem to insure a fair treatment of the railways. It is hoped that Congress will give the matter immediate attention and that the method of compensation recommended by the department or some other suitable plan will be promptly authorized.

DEPARTMENT OF THE INTERIOR.

The Interior Department, in the problems of administration included within its jurisdiction, presents more difficult questions than any other. This has been due perhaps to temporary causes of a political character, but more especially to the inherent difficulty in the performance of some of the functions which are assigned to it. Its chief duty is the guardianship of the public domain and the disposition of that domain to private ownership under homestead, mining, and other laws, by which patents from the Government to the individual are authorized on certain conditions. During the last decade the public seemed to become suddenly aware that a very large part of its domain had passed from its control into private ownership, under laws not well adapted to modern conditions, and also that in the doing of this the provisions of existing law and regulations adopted in accordance with law had not been strictly observed, and that in the transfer of title much fraud had intervened, to the pecuniary benefit of dishonest persons. There arose thereupon a demand for conservation of the public domain, its protection against fraudulent diminution, and the preservation of that part of it from private acquisition

which it seemed necessary to keep for future public use. The movement, excellent in the intention which prompted it, and useful in its results, has nevertheless had some bad effects, which the western country has recently been feeling and in respect of which there is danger of a reaction toward older abuses unless we can attain the golden mean, which consists in the prevention of the mere exploitation of the public domain for private purposes while at the same time facilitating its development for the benefit of the local public.

The land laws need complete revision to secure proper conservation on the one hand of land that ought to be kept in public use and, on the other hand, prompt disposition of those lands which ought to be disposed in private ownership or turned over to private use by properly guarded leases. In addition to this there are not enough officials in our Land Department with legal knowledge sufficient promptly to make the decisions which are called for. The whole land-laws system should be reorganized, and not until it is reorganized, will decisions be made as promptly as they ought, or will men who have earned title to public land under the statute receive their patents within a reasonably short period. The present administration has done what it could in this regard, but the necessity for reform and change by a revision of the laws and an increase and reorganization of the force remains, and I submit to Congress the wisdom of a full examination of this subject, in order that a very large and important part of our people in the West may be relieved from a just cause of irritation.

I invite your attention to the discussion by the Secretary of the Interior of the need for legislation with respect to mining claims, leases of coal lands in this country and in Alaska, and for similar disposition of oil, phosphate, and potash lands, and also to his discussion of the proper use to be made of water-power sites held by the Government. Many of these lands are now being withheld from use by the public under the general withdrawal act which was passed by the last Congress. That act was not for the purpose of disposing of the question, but it was for the purpose of preserving the lands until the question could be solved. I earnestly urge that the matter is of the highest importance to our western fellow citizens and ought to command the immediate attention of the legislative branch of the Government.

Another function which the Interior Department has to perform is that of the guardianship of Indians. In spite of everything which has been said in criticism of the policy of our Government toward the Indians, the amount of wealth which is now held by it for these wards per capita shows that the Government has been generous; but the management of so large an estate, with the great variety of circumstances that surround each tribe and each case, calls for the

exercise of the highest business discretion, and the machinery provided in the Indian Bureau for the discharge of this function is entirely inadequate. The position of Indian commissioner demands the exercise of business ability of the first order, and it is difficult to secure such talent for the salary provided.

The condition of health of the Indian and the prevalence in the tribes of curable diseases has been exploited recently in the press. In a message to Congress at its last session I brought this subject to its attention and invited a special appropriation, in order that our facilities for overcoming diseases among the Indians might be properly increased, but no action was then taken by Congress on the subject, nor has such appropriation been made since.

The commission appointed by authority of the Congress to report on proper method of securing railroad development in Alaska is formulating its report, and I expect to have an opportunity before the end of this session to submit its recommendations.

DEPARTMENT OF AGRICULTURE.

The far-reaching utility of the educational system carried on by the Department of Agriculture for the benefit of the farmers of our country calls for no elaboration. Each year there is a growth in the variety of facts which it brings out for the benefit of the farmer, and each year confirms the wisdom of the expenditure of the appropriations made for that department.

PURE-FOOD LAW.

The Department of Agriculture is charged with the execution of the pure-food law. The passage of this encountered much opposition from manufacturers and others who feared the effect upon their business of the enforcement of its provisions. The opposition aroused the just indignation of the public, and led to an intense sympathy with the severe and rigid enforcement of the provisions of the new law. It had to deal in many instances with the question whether or not products of large business enterprises, in the form of food preparations, were deleterious to the public health; and while in a great majority of instances this issue was easily determinable, there were not a few cases in which it was hard to draw the line between a useful and a harmful food preparation. In cases like this when a decision involved the destruction of great business enterprises representing the investment of large capital and the expenditure of great energy and ability, the danger of serious injustice was very considerable in the enforcement of a new law under the spur of great public indignation. The public officials charged with executing the law might do injustice in heated controversy through unconscious

pride of opinion and obstinacy of conclusion. For this reason President Roosevelt felt justified in creating a board of experts, known as the Remsen Board, to whom in cases of much importance an appeal might be taken and a review had of a decision of the Bureau of Chemistry in the Agricultural Department. I heartily agree that it was wise to create this board in order that injustice might not be done. The questions which arise are not generally those involving palpable injury to health, but they are upon the narrow and doubtful line in respect of which it is better to be in some error not dangerous than to be radically destructive. I think that the time has come for Congress to recognize the necessity for some such tribunal of appeal and to make specific statutory provision for it. While we are struggling to suppress an evil of great proportions like that of impure food, we must provide machinery in the law itself to prevent its becoming an instrument of oppression, and we ought to enable those whose business is threatened with annihilation to have some tribunal and some form of appeal in which they have a complete day in court.

AGRICULTURAL CREDITS.

I referred in my first message to the question of improving the system of agricultural credits. The Secretary of Agriculture has made an investigation into the matter of credits in this country, and I commend a consideration of the information which through his agents he has been able to collect. It does not in any way minimize the importance of the proposal, but it gives more accurate information upon some of the phases of the question than we have heretofore had.

DEPARTMENT OF COMMERCE AND LABOR.

I commend to Congress an examination of the report of the Secretary of Commerce and Labor, and especially that part in which he discusses the office of the Bureau of Corporations, the value to commerce of a proposed trade commission, and the steps which he has taken to secure the organization of a national chamber of commerce. I heartily commend his view that the plan of a trade commission which looks to the fixing of prices is altogether impractical and ought not for a moment to be considered as a possible solution of the trust question.

The trust question in the enforcement of the Sherman antitrust law is gradually solving itself, is maintaining the principle and restoring the practice of competition, and if the law is quietly but firmly enforced, business will adjust itself to the statutory requirements, and the unrest in commercial circles provoked by the trust discussion will disappear.

PANAMA–PACIFIC INTERNATIONAL EXPOSITION.

In conformity with a joint resolution of Congress, an Executive proclamation was issued last February, inviting the nations of the world to participate in the Panama-Pacific International Exposition to be held at San Francisco to celebrate the construction of the Panama Canal. A sympathetic response was immediately forthcoming, and several nations have already selected the sites for their buildings. In furtherance of my invitation, a special commission visited European countries during the past summer, and received assurances of hearty cooperation in the task of bringing together a universal industrial, military, and naval display on an unprecedented scale. It is evident that the exposition will be an accurate mirror of the world's activities as they appear 400 years after the date of the discovery of the Pacific Ocean.

It is the duty of the United States to make the nations welcome at San Francisco and to facilitate such acquaintance between them and ourselves as will promote the expansion of commerce and familiarize the world with the new trade route through the Panama Canal. The action of the State governments and individuals assures a comprehensive exhibit of the resources of this country and of the progress of the people. This participation by States and individuals should be supplemented by an adequate showing of the varied and unique activities of the National Government. The United States can not with good grace invite foreign governments to erect buildings and make expensive exhibits while itself refusing to participate. Nor would it be wise to forego the opportunity to join with other nations in the inspiring interchange of ideas tending to promote intercourse, friendship, and commerce. It is the duty of the Government to foster and build up commerce through the canal, just as it was the duty of the Government to construct it.

I earnestly recommend the appropriation at this session of such a sum as will enable the United States to construct a suitable building, install a governmental exhibit, and otherwise participate in the Panama-Pacific International Exposition in a manner commensurate with the dignity of a nation whose guests are to be the peoples of the world. I recommend also such legislation as will facilitate the entry of material intended for exhibition and protect foreign exhibitors against infringement of patents and the unauthorized copying of patterns and designs. All aliens sent to San Francisco to construct and care for foreign buildings and exhibits should be admitted without restraint or embarrassment.

THE DISTRICT OF COLUMBIA AND THE CITY OF WASHINGTON.

The city of Washington is a beautiful city, with a population of 352,936, of whom 98,667 are colored. The annual municipal budget is about $14,000,000. The presence of the National Capitol and other governmental structures constitutes the chief beauty and interest of the city. The public grounds are extensive, and the opportunities for improving the city and making it still more attractive are very great. Under a plan adopted some years ago, one half the cost of running the city is paid by taxation upon the property, real and personal, of the citizens and residents, and the other half is borne by the General Government. The city is expanding at a remarkable rate, and this can only be accounted for by the coming here from other parts of the country of well-to-do people who, having finished their business careers elsewhere, build and make this their permanent place of residence.

On the whole, the city as a municipality is very well governed. It is well lighted, the water supply is good, the streets are well paved, the police force is well disciplined, crime is not flagrant, and while it has purlieus and centers of vice, like other large cities, they are not exploited, they do not exercise any influence or control in the government of the city, and they are suppressed in as far as it has been found practicable. Municipal graft is inconsiderable. There are interior courts in the city that are noisome and centers of disease and the refuge of criminals, but Congress has begun to clean these out, and progress has been made in the case of the most notorious of these, which is known as "Willow Tree Alley." This movement should continue.

The mortality for the past year was at the rate of 17.80 per 1,000 of both races; among the whites it was 14.61 per thousand, and among the blacks 26.12 per thousand. These are the lowest mortality rates ever recorded in the District.

One of the most crying needs in the government of the District is a tribunal or public authority for the purpose of supervising the corporations engaged in the operation of public utilities. Such a bill is pending in Congress and ought to pass. Washington should show itself under the direction of Congress to be a city with a model form of government, but as long as such authority over public utilities is withheld from the municipal government, it must always be defective.

Without undue criticism of the present street railway accommodations, it can be truly said that under the spur of a public utilities commission they might be substantially improved.

While the school system of Washington perhaps might be bettered in the economy of its management and the distribution of its

buildings, its usefulness has nevertheless greatly increased in recent years, and it now offers excellent facilities for primary and secondary education.

From time to time there is considerable agitation in Washington in favor of granting the citizens of the city the franchise and constituting an elective government. I am strongly opposed to this change. The history of Washington discloses a number of experiments of this kind, which have always been abandoned as unsatisfactory. The truth is this is a city governed by a popular body, to wit, the Congress of the United States, selected from the people of the United States, who own Washington. The people who come here to live do so with the knowledge of the origin of the city and the restrictions, and therefore voluntarily give up the privilege of living in a municipality governed by popular vote. Washington is so unique in its origin and in its use for housing and localizing the sovereignty of the Nation that the people who live here must regard its peculiar character and must be content to subject themselves to the control of a body selected by all the people of the Nation. I agree that there are certain inconveniences growing out of the government of a city by a national legislature like Congress, and it would perhaps be possible to lessen these by the delegation by Congress to the District Commissioners of greater legislative power for the enactment of local laws than they now possess, especially those of a police character.

Every loyal American has a personal pride in the beauty of Washington and in its development and growth. There is no one with a proper appreciation of our Capital City who would favor a niggardly policy in respect to expenditures from the National Treasury to add to the attractiveness of this city, which belongs to every citizen of the entire country, and which no citizen visits without a sense of pride of ownership. We have had restored by a Commission of Fine Arts, at the instance of a committee of the Senate, the original plan of the French engineer L'Enfant for the city of Washington, and we know with great certainty the course which the improvement of Washington should take. Why should there be delay in making this improvement in so far as it involves the extension of the parking system and the construction of greatly needed public buildings? Appropriate buildings for the State Department, the Department of Justice, and the Department of Commerce and Labor have been projected, plans have been approved, and nothing is wanting but the appropriations for the beginning and completion of the structures. A hall of archives is also badly needed, but nothing has been done toward its construction, although the land for it has long been bought and paid for. Plans have been made for the union of Potomac Park with the valley of Rock Creek and Rock Creek Park, and the necessity for the connection between the Soldiers' Home and

Rock Creek Park calls for no comment. I ask again why there should be delay in carrying out these plans? We have the money in the Treasury, the plans are national in their scope, and the improvement should be treated as a national project. The plan will find a hearty approval throughout the country. I am quite sure, from the information which I have, that, at comparatively small expense, from that part of the District of Columbia which was retroceded to Virginia the portion including the Arlington estate, Fort Myer, and the palisades of the Potomac can be acquired by purchase and the jurisdiction of the State of Virginia over this land ceded to the Nation. This ought to be done.

The construction of the Lincoln Memorial and of a memorial bridge from the base of the Lincoln Monument to Arlington would be an appropriate and symbolic expression of the union of the North and the South at the Capital of the Nation. I urge upon Congress the appointment of a commission to undertake these national improvements, and to submit a plan for their execution; and when the plan has been submitted and approved, and the work carried out, Washington will really become what it ought to be—the most beautiful city in the world.

WM. H. TAFT.

THE WHITE HOUSE,
December 19, 1912.

ANNUAL REPORT ON THE FINANCES.

REPORT OF THE SECRETARY OF THE TREASURY.

TREASURY DEPARTMENT,
Washington, December 2, 1912.

SIR: I have the honor to make the following report:

BANKING AND CURRENCY REFORM.

One of the most important facts in connection with Banking and Currency legislation is its urgency. As long as our banking and currency system remains as it is the immeasurable disaster of a panic will remain a possibility. The system under which we are living not only will not prevent a panic, but after a certain point in the generation of panic conditions is reached, will make it inevitable. So that, as long as the financial system created by our Federal laws remains unchanged and unreformed, the government will be exclusively responsible for the commercial, industrial and social disasters which flow from panics. This responsibility is a fixed one. It is unavoidable; and ought to be frankly recognized and acknowledged. The people are helpless. The character of this responsibility is better understood when it is realized that the effects of financial panics are not at all confined to the banks and the larger business world. A panic such as that of 1907, or a lesser panic, reaches directly or indirectly every town and hamlet of the country, and every family and individual. It nationalizes itself long before it has gone far; and its interruption of the business movements large and small, its fracture of the organization under which commercial and industrial life go on and the resulting social suffering are prolonged into years. These facts intensify the significance of the delays and postponements of the government. A panic is as unnecessary and as avoidable as an epidemic of smallpox. You can have an epidemic of smallpox if you disregard all that science has provided as a preventive. You can not possibly have an epidemic of smallpox if you will apply the simple means that science has provided. So we will continue to have panics only so long as we refuse to apply the simple preventives which he who runs may read.

Not only does the system established by the present Federal laws promote and develop panics, but at all times the country is carrying the needless and heavy burden of an unfit and wholly insufficient banking and currency system. This system never permits entirely free commercial, financial or industrial action at any time; because its liability to sudden constraint and restriction is always a part of the nation's financial consciousness. There never is a time when there is any long look ahead; except when we are in the midst of a panic when there is a long look of disaster ahead. There is never a long look of ease and convenience and prosperity ahead.

This is true even in the quietest periods of the year. And then there always comes, in the crop moving season, a special stress and constraint; which not only affects the imaginations but the actual resources of the banks. The autumnal constrictions are not felt, of course, so severely as those of a panic; but severely enough to make long periods of wholly unnecessary discomfort and apprehension; not to speak of the actual lack of financial facilities legitimately needed by the people and denied by the government.

We have had before us this autumn another object lesson of the urgency of the need of banking and currency relief. This relief which is so urgently needed by the legitimate business and enterprise of our people is not relief from a financial situation built up by the financial world itself, but is from a system and conditions superimposed by the government; and forced upon the business community and upon American society. The banking and currency system is the product of Federal law. And there can be no relief from it until Congress acts. And this is why Congressional action is urgent.

Fortunately, the banks have been able unaided to carry on, this autumn, the financial operations necessary to the movement of our vast crops; and at the same time finance the operations of a general business expansion—even in the face of a European disturbance. This, however, has called out nearly all the resources that were available under our constricting system. And it was at no time certain that the Treasury Department might not be fairly called upon to use its facilities to assist these ordinary business transactions. I should have been sorry to feel it necessary for the Treasury Department to intervene at such a normal period as this. But, of course, it would have assisted if it had become necessary; for the use of the surplus in the Treasury belongs of right to the business operations of the country whenever a real need for it arises. In view, however, of the impotent condition of our bank reserves whenever reserves are seriously needed, it has seemed that the present moderate accumulations in the Treasury might well be held intact for a greater need. The Treasury reserve is the only trustworthy one we have; and until Congress furnishes the nation with another and better reserve it is

well to make that of the Treasury as useful and responsible as possible. I think it fortunate that the financial world has been able to finance the enlarged business of the country this autumn without resort to the reserve which the Treasury Department has accumulated. I also think it fortunate that the Treasury has accumulated a reserve to aid in bridging over until the new and urgent legislation is passed, and believe it is of high public importance that such a reserve shall be maintained until a more legitimate one has been provided for by legislation.

This anomalous relation between the Treasury Department and the general financial world is, at the same time, a part of the thing to be reformed. Taking large sums of actual money out of the ordinary financial use and locking it up as a dead mass in the vaults of the Treasury is a proceeding as unscientific and unreasoned as any other part of our unreasoned and unscientific banking and currency system. But until that system is changed so as to provide a trusty system of bank reserves, it seems to me the Treasury Department performs, as incidental to its very bad share in the banking and currency system, some functions as a reserve center which are of very great value. Since, however, the Treasury surplus is not a genuine self-acting reserve, it is desirable that as long as it is not excessive, it shall not be too easily drawn upon and absorbed—not used as long as the ordinary facilities of the money market can be made sufficient to meet the general demand. It was upon these general views that the Treasury Department acted this fall with respect to the money market.

It is not my intention to speak of the details of this urgent relief measure—this Banking and Currency legislation. But the general features of a new system—if that system shall be at all adequate to the emergency—must include, among its necessary features, provisions for never-failing reserves and never-failing currency, and for the perfect elasticity and flexibility of both; for the permanent organization and organized cooperation of the banks, which are now suffering and causing the nation to suffer by reason of their unorganized state; for a central agency, to represent and act for the organized and cooperative banks—this agency to be securely free from political or trust control, but with the government having adequate and intimate supervision of it; for independent banking units—so independent that no one bank can be owned, controlled or shared in in any degree, directly or indirectly, by any other bank; for the equality of all banks, national or state, both as to standards and as to functions—so that every requirement made of a national bank must be complied with equally by a state bank, and every function or privilege enjoyed by a state bank shall be enjoyed by a national bank; for the utilization and the fluidity of bank assets; for the scientific development of ex-

changes—domestic and foreign; for foreign banking as an adjunct of our foreign commerce; and for taking the Treasury Department out of the banking business.

ALDRICH-VREELAND LAW.

In order that the Treasury Department might do what it could—pending legislation—to reduce the inconveniences and dangers of the present Banking and Currency system, it promoted and secured the formation of all necessary National Currency Associations throughout the country to make available the provisions of the Aldrich-Vreeland law in case of need—and as a preventive of need, and these Associations are now practically complete. The important facilities afforded by that law are now available; and the assured knowledge that these facilities are ready to act at once is of itself a strong preventive of trouble.

That law, by the way, will expire by limitation June 30, 1914; and I recommend very strongly a reasonable extension of it that it may not lapse before it becomes unnecessary.

BUDGET.

In all of my reports to the Congress, I have called attention to the absence, in our governmental machinery, of anything in the nature of a budget; and while recognizing the difficulties in establishing a budget under our form of government, have each year thought it necessary to urge the importance and practical necessity of overcoming these difficulties.

The President will now deal with this matter elaborately; and it is no longer necessary for me to do more than renew the expressions of my interest in it.

CUSTOMS.

The eradication of the widespread frauds upon the sugar revenues and the concurrent rehabilitation of the customs service have been completed. Every needed reform has been established, including the introduction of electric automatic weighing. And, in addition to the present and future protection of the sugar revenues, and in addition to the reestablishment of the service, there has been collected as unpaid duties—and from drawback offenses—the sum of $4,359,750.17. The sampling of sugars and the taring of sugars have also been reformed; and a new system of drawbacks on sugars and syrups has been inaugurated.

It was found that the weighing frauds extended to various other imports besides sugars; and these have also been cleaned up.

Then with a revised Special Agents Service, aiding the customs officials of New York and other cities, and with the cooperation of the Department of Justice, investigations were carried beyond the weigh-

ing and similar frauds to the field of undervaluations; and a remarkable series of discoveries and exposures in various lines of importations has resulted; and the collections of back duties and fines imposed upon the frauds upon the revenues in these cases, added to the sum received from the importers of sugar, have raised the total of the money recovered to $8,200,000. These investigations and developments of fraudulent undervaluations are still going on.

Travelers' smuggling.

It early became clear that the most demoralizing and obstructive of the current frauds upon the revenues were those perpetrated by incoming travelers. These irregularities, though not of great magnitude, had become notorious and stared the Department in the face—and stared the public in the face; and involved corruption of customs officers. They were not only conspicuous but were almost defended. Unless, therefore, they were dealt with and at least attempted to be corrected, it would be idle to endeavor to rehabilitate the customs service in general. This correction has been accomplished to a remarkable degree. Concurrently with the enforcement of the law against these amateur frauds, and with the almost complete defeat of the important professional smuggling done by professional passengers, there has gone on successfully the reconstruction of the inspectors force, the establishment of a watchmens force, and the general rehabilitation of the whole customs service. At New York alone the revenues from travelers' imports have increased from an average of $890,688 for the four years preceding this administration to about $2,100,000 in 1912, with the last two months of the year estimated. But the increase in revenues is of far less consequence than the increase in morals.

Increased revenue.

It is not possible to definitely add up the total yearly increase in customs revenues due to the exposures effected, the reforms instituted and the higher character of the service. But it seems to everybody in the Treasury Department cognizant with the facts that an annual saving of $10,000,000 is distinctly an under-estimate. Ten million dollars a year soon mounts up into very large figures. But the moral reform is of greater significance than the reform in collections.

Customs expenses.

It is worth noting that in the fiscal year ending June thirtieth the expenditure for the collection of the customs revenues—for the first time in recent years—was less than the year before. Heretofore, for a long time, there has been a steady annual increase in the expenditure for customs. The Department has found it difficult to arrest these

mounting expenditures while supplying many deficiencies in the service; but in the last fiscal year the cost was reduced instead of being increased

REFORM OF THE GOVERNMENT'S APPRAISING WORK.

The revelations of wide spread undervaluations in various lines of merchandise—to which I have referred—were convincing of the fact that the appraising system and the appraising operations of the Government needed revision and reform. Extensive as the investigations and the discoveries and exposures have been, and covering as they do a considerable area of the total importations, we still have not had time to at all cover the whole ground. Far beyond enough, however, has been discovered, and laid bare, to show that the appraising work of the Government is inadequate. All of the many undervaluations which have been discovered had passed through the appraising offices. The frauds had not been detected or even suspected by the examiners or appraisers. Such a condition as that indicated beyond question that improvement and reform were greatly needed somewhere and somehow in the appraising work of the Government; not only at the port of New York, where two-thirds of the work is done, but throughout the country as well. It was very significant of this need of overhauling that the discoveries of this large area of fraudulent undervaluations did not proceed from the appraising side of the Government but through the other Treasury services. I, therefore, after exhausting other methods, appointed a committee of Treasury men to investigate and report upon the whole appraising system and operation. This committee is about to report, and I am confident this report will so complete the Department's exact knowledge of the situation as will enable us, before the close of this administration, to greatly improve our appraising conditions. Possibly, however, it will be necessary to ask Congress for some remedial legislation.

INVESTIGATION OF THE BOARD OF GENERAL APPRAISERS.

There are other serious defects in the appraising work of the Government. These defects are due to the anomalous relations of the Board of General Appraisers to the Treasury Department. I became convinced some time ago that serious inquiry must be made into the attitude, the system, and the operations of the Board of General Appraisers. This inquiry needed to be especially made with a view to finding out whether the appraising work can be done efficiently without a reviewing board as a part of the Department itself; and whether the nondescript character of the present Board of General Appraisers, which is neither a reviewing board within the Department nor a court outside the Department, is not a complete

bar to a scientific and efficient system of Government appraising. A commission has been appointed by the President to inquire into these matters; and the investigation is going on. The remedies for this anomalous and hurtful situation may require legislation, in which case the matter will be presented to the Congress.

The original institution of the Board of General Appraisers was due to the need in the appraising work of a board of review within the Department and as a part of the Department; and that need is far greater now than it was when the Board was instituted. At present the appraising is done by individual examiners, and while there are appraisers and assistant appraisers in the service they do not in practice, at the larger ports, accomplish an effective review of the work of examiners. The consequence is that practically the whole of these immense interests of the Government depends upon the knowledge and the investigations and the independent judgment of single examiners. It can readily be seen that the Treasury Department in doing this work through single examiners ought to have an organized oversight of all valuations and, where necessary, a review of the work of the examiners before it is final, and before the record is made from which an appeal to the courts can be taken—and before undervaluations are finally loaded upon the revenues. Moreover, the independence of the examiners is more or less seriously invaded, in practice, by their dread of unsympathetic treatment from the Board of General Appraisers. This Board has drifted from its original place within the Treasury Department to a quasi-independence as a court outside of it; thus removing one of the most necessary institutions of the Department and establishing a court that is not really a court and was never intended to be a court. If another court is necessary in the judgment of the Congress—a court inferior to the Customs Court recently established—well and good. I do not think such a court is necessary; but that is not a matter that concerns essentially the Treasury Department. What the Department needs is a Board of General Appraisers within the Department to overlook and supervise and unify the appraising work of the country.

REORGANIZATION OF CUSTOMS DISTRICTS.

The Congress, at the suggestion of the Treasury Department, passed a law at the last session authorizing the reorganization of the customs offices and districts of the country with a view to economy and efficiency. Many custom houses and offices are mere survivals of trade conditions that have long since changed. The time has come when the old organization should be overhauled and put upon a reasonable and fair business basis. I beg to report to the Congress which has made the reform possible that it will soon be accomplished.

POLITICS AND THE SERVICE.

In former Reports I have commented upon the importance of the separation of the service—and especially the classified part of it—from practical politics; and I have become more and more impressed as my experience has increased, that no association, however limited, between political organizations and the civil service of the government ought to be allowed. And with another party soon coming into power, it seems more than ever well to repeat, that it is impossible to maintain full efficiency or full character in the customs service, or in any other service, unless it is rigidly separated from the influence of political organizations, no matter to what party they belong. And it is a matter of importance and congratulation that political interference has been extremely minimized in all the services of the Treasury Department; and that to restore it will require well directed violence.

OTHER CHANGES.

Other reforms in the Treasury Department have not had to do with the correction of frauds, but with the economies, revisions and reconstructions of its organization and administration—and in the institution of labor saving devices. This kind of reform has resulted in the abolishment of 540 positions in the Treasury Department at Washington. That number of places has been permanently abolished and the appropriations for them permanently canceled, with, it is fair to say, an added efficiency in the work; and without dismissing from the service any one because these Washington positions were abolished. All employes dispossessed by these reforms have been placed in vacancies normally accruing by death or resignation or in some cases by transfer to other departments. The total number of positions abolished in the entire Treasury Department of the country, during this administration, has amounted to 1,915. And all these positions have been abolished concurrently with a distinct growth in the efficiency of the whole Department.

INTERNAL REVENUE ADMINISTRATION.

What is true of the customs service is equally true of the internal revenue service. That service was never more efficiently administered, and never with less political influence, than during this administration. And the internal revenues as well as the customs revenues have unquestionably been largely increased by more administration and less politics.

IMPROVEMENT OF THE TREASURY BUILDING.

It has been the good fortune of this administration of the Treasury Department to change the appearance of the Treasury building outside and in, to improve its facilities and office arrangements

greatly to the benefit of its operations, to make it a more attractive and comfortable place in which to work, and to go a considerable distance in improving its sanitation and its wholesome conditions of living and working. The great Treasury building is one of the chief architectural assets of the Nation; and it is fortunate that we have demonstrated that it can be a permanently acceptable department building. Notwithstanding the liberality of Congress, notwithstanding the extensive changes and improvements that are now accomplished, and notwithstanding the large improvement in its sanitation and up-to-date maintenance, there is much yet to be done by this and the incoming administration; and I earnestly commend the new estimates for these improvements which will be presented. The Congress can well afford to appropriate the money needed to make the great Treasury building in all respects of sanitary and other reasonable equipment worthy of its great architecture.

LAUNDERING OF NOTES.

The machinery for laundering currency notes, including national bank notes, has been perfected. A number of machines have already been constructed and the complete number will very soon be ready and put in operation. The Treasurer's office and all the subtreasury offices either are or soon will be adequately equipped for this interesting service—which in the end will furnish to the people a complete and constant supply of clean currency. This reform, besides its other advantages and attractions, will mean a saving to the government of more than $500,000 per annum.

The laundering machines can be produced at a sufficiently moderate cost and can be operated cheaply enough to warrant their use by the larger banks, by the clearing houses, and by the larger retail stores. There is every reason to expect that their use will spread accordingly; thus adding still more to the convenience and satisfaction of the public, and increasing the saving to the government.

ASSAY OFFICES.

I feel it my duty to repeat—and with added accent—the recommendation of the Treasury Department for the abolition of all the Assay Offices in the country except that at New York City; and to confine the assay work to that office and the Mints. Congress has accepted a part of our recommendations; and, partly with this aid and partly without needing it, we have greatly reduced the cost of the Mint Service; and have included in this reduction the abolition of one mint and one assay office. I hope Congress will now accept our repeated recommendation for the abolition of the remaining Assay Offices—except the one at New York. These assay offices are mere survivals of a time when there was an excuse for their existence. There is no excuse for their existence to-day. They are

mere burdens upon the revenues of the Government without answering any good purpose, or satisfying any legitimate demand. They are no more necessary than those customs offices as to which Congress has accepted our recommendation. It is inconsistent, when we are trying to reduce the cost of living, to continue as a tax upon the people the burden of useless and out-lived expensive offices.

CENTRAL POWER PLANT.

I again urge upon the attention of the Congress the economic importance of a central power plant which will supply electrical power and light for the new and old buildings of the Bureau of Engraving and Printing, the Agricultural Department, the Museum, and the group of government buildings built and to be built in the neighborhood of the White House. A competent commission, which I appointed about two years ago, matured the project and reported. The Government can supply itself with power and light under the most favorable conditions of cost and administration, and without the unsightly conditions and the smoke of the present situation. When so much general improvement can be accomplished with the accompaniment of a material saving in cost, it seems that the Government ought to take action at once. It is necessary, if this plant is to be built, to appropriate for it immediately in order to avoid the necessity of building a plant at the new building of the Bureau of Engraving and Printing. I urge this important improvement, with its considerable saving, upon the prompt attention of the Congress.

REDUCED TIME IN BUILDING.

The time consumed in constructing public buildings has long been excessive and expensive—and ought to be materially reduced. The item of superintendence alone where the construction is unduly prolonged becomes an important percentage of the cost; and sometimes, as in the case of the post office at Chicago, the time consumed in construction has been so long that the building when completed and finally ready for use has lost its adequacy. The expense in carrying charges from this lingering mode of building, and the expense to contractors and to the office facilities of the Treasury Department, could not be borne by private capital. When private capital constructs a building for commercial uses, it is obliged to build in the shortest time possible, and to secure occupancy as early as possible. I chose the new building for the Bureau of Engraving and Printing as an object lesson and succeeded in letting the contract for completion in sixteen months, which approximates the celerity with which private commercial buildings are erected. I am happy to say that the contractor can complete his work considerably within the limit. The supervising architect's office has now become interested in this economy and promises to accelerate the construction of all buildings.

BUSINESS WITH THE PUBLIC.

The transactions of the Treasury Department—and especially those with its debtors and creditors—ought certainly to conform sufficiently to the ordinary customs and practices of business life to conserve the general convenience. There is no more reason why the Treasury Department should be difficult toward people whom it is paying money to or receiving money from than there is why a private business man should. Indeed, the Government ought to set the example of considerate treatment and of good business practice. But a good many methods and customs have been adopted and crystallized by it in dealing with the public that compare unfavorably with those of private business, and which seriously prejudice the rights of the people it deals with. There is more or less unpopular method generally—and apart from fiscal matters—in the Government's dealings with the public in business matters. And so far as the Treasury Department is concerned, more or less attention has been given to these matters as they have come to the surface. But attention has been particularly given to the fiscal side of the work. The Department, for example, has favored the establishment of clearing house relations for the Subtreasuries, and hopes to completely establish those relations. This is an essential piece of conformity with usual custom, and considerations favoring it are of real importance. The larger provision for gold bars and their greater recognition as a part of trade facilities and the treatment of foreign coin from the same point of view, are instances in point; as is also the acceptance of certified checks instead of currency for customs and internal revenue payments—and the proposed extension of this practice to all receipts of the Government.

We hope to still further conform to good business practice, and to further conserve the rightful convenience of the public by making our payments at such points throughout the country as will make all the checks of the Government of a par value. At present, in a great many instances, the difficulties of collecting the checks of the Government where they are payable obliges a payment of exchange. Pension checks, for example, in a great many instances, do not produce to the pensioner the sum that the Government means to pay him. A part of his check goes to the bank in payment for collection, because the place where the Government pays the check is, in these cases, at a distance which requires the usual expensive method of bank exchange. The Government ought to pay everybody one hundred cents on the dollar; and, at present, this, in many cases, is not being done. And it is wholly because the Treasury Department fails to have its funds where they can be drawn upon without cost to the holder of its checks.

POWER-PRESS PRINTING.

The reason why power-press printing has been so largely excluded from the Treasury Department, and the practice of printing currency, bonds, and checks in the very expensive and old-fashioned way of hand or plate printing has prevailed, is that it continued to be believed that the best work could not be done on power presses; and that in the interest of the arts of engraving and printing and as a protection against counterfeiting the work must be done by hand. The belief in these printing distinctions is now generally given up. Certainly, it has been conclusively proven, by identical work done under the two methods, that no expert can tell the difference between the two kinds of printed notes. As long as the Government was printing a relatively small amount of notes and bonds, as it was a few years ago, the extra expense of hand printing was not greatly felt; and, moreover, the perfection of power-press printing had not been achieved. But now that power-press printing has arrived at the highest excellence of technique, and the amount of this particular printing has become extremely large and is growing larger, the time has arrived for a change in the printing methods, with a view to necessary economy and to the progressive, up-to-date handling of the Government's engraving and printing work. Of course, these changes should be sufficiently gradual to protect the interests of all the people employed. It is not fair for the Government to wipe out ruthlessly what is practically a remnant of the hand-printing trade, without provision for its transition to the new conditions. It happens, however, that this transition can be made readily and to the actual advantage of the hand printers. The truth seems to be that all the competent printers could within a short time be transferred into power-press printers, with larger wages. And, of course, it is right that labor should have a share in the economies resulting from the introduction of labor saving machinery. It happens, moreover, in addition to everything else, that the power-press printing is a much more healthful occupation than hand printing. The latter, indeed, is unwholesome and overtaxing work, and leads to serious breakdowns among the employees. On every account, therefore, of economy, better wages and more healthful work, the substitution of power presses for hand presses is in everybody's interest.

Within the last few months, we have introduced a beginning of this change. I cannot claim it is the best arrangement that could have been made. However, it is a beginning and already effects partial savings; and will give the printers an opportunity to become practically convinced of the advantages to themselves of up-to-date methods. And the comparatively little that has so far been accomplished has the advantage of having everybody's assent. It was these considerations that led me to accept an inadequate treatment

of the subject. I am sure the change from hand printing to power-press printing is equally in the interest of the printers and the Government; and is in the line of ordinary, commonplace industrial progress. It is to be regretted, therefore, that so much postponement has to be accepted.

PUBLIC HEALTH SERVICE.

It is a matter of highest congratulation that the Congress at its last session decided to significantly enlarge the active functions of the Public Health Service; and at the same time corrected some of the deficiencies of the pay of those engaged in this distinguished work. By this action the Congress has stamped its approval upon the policy of developing the Public Health Service for the fulfillment of its great public duty, and to meet the just demands of the nation. It is neither possible nor desirable, from any point of view, for the Federal Government to replace the appropriate public health responsibilities or activities of cities or states. There is, however, an immense field of operation for the Federal Public Health Service, both with respect to independent work of its own and in helping the local public health work. And it seems to be imperative to develop this service with as little delay as possible, now that the Congress has acted. And, of course, in order to perform its duty to the nation at large it must have adequate appropriations. And I sincerely trust that the Congress—which has always been interested in public health work—will realize the importance of immediate adequate provision for the enlarged Public Health Service. The service itself is in a state of great efficiency and energy, and is entitled to the entire confidence of the Congress, which can without misgivings furnish it ample means for its development. Fortunately, this increased public health work will call for almost absurdly small amounts of money in comparison with its extraordinary importance and necessity.

The very eminent Advisory Board of scientists, provided for the assistance of the Public Health Service, has been invited by the Department to largely increase its participation and active interest in the new development; and I am happy to say it has heartily entered into the problems, and is taking a most helpful share in developing the new plans and policies.

On every hand, therefore, the usefulness of the Public Health Service is being promoted; and it furnishes one of the great opportunities the Federal Government has, to perform critical and important functions for the nation at large—functions which cannot possibly be performed except through an agency of the Federal Government. The essential thing now is to see to it that there is no further delay due to the lack of generous appropriations.

BUILDING PROGRAM OF THE REVENUE-CUTTER SERVICE.

At the last session, Congress failed to appropriate for four revenue cutters, the building of which it was necessary to begin at once in order to keep the Revenue-Cutter Service up to its standard.

The average efficient life of a revenue cutter is about twenty years. After that the vessel and her machinery become obsolete, and she is unable to perform the duties required of her. In addition to this, extensive repairs are needed frequently; and the cost of these repairs amounts to such a percentage of the value of the old vessel that it is not economical to longer continue the vessel in service. With a fleet of 37 vessels, the average efficient life of each being about twenty years, there should be provided two new vessels annually in order to keep the fleet in efficient condition. There is urgent need at the present time for the two new vessels annually required; for one other to remedy in part the failure to provide an efficient number of new vessels during the past few years caused by not having followed a systematic program for replacement; and for a fourth to replace the Perry, lost in Bering Sea in 1910.

We cannot have the Revenue-Cutter Service without maintaining it—we cannot maintain it without appropriating for it. That both the opinion of the Congress and of the public highly favors the full maintenance and support of this really wonderful and indispensable service must be apparent. I am sure it only requires my again calling this building program to the attention of the Congress to insure prompt and hearty acceptance of it.

It is also practically necessary to appropriate for the replenishing of the wireless service on the revenue cutters. There is no money for this, and much of the mechanism has become out-of-date and inefficient. When we remember how much of human life and property is dependent upon the efficiency of the wireless service on revenue cutters it seems to me I need do no more than tell the Congress that money is needed to keep this mechanism efficient.

I also wish to call attention to the provision in the sundry civil bill of 1913, as follows:

> No additional appointments as cadets or cadet engineers shall be made in the Revenue Cutter Service unless hereafter authorized by Congress.

At the present time there are ten vacancies in the commissioned personnel. The total number of officers authorized by law is 242, and in such a small number the existence of ten vacancies which cannot be filled under the law, with every prospect of additional vacancies from death and resignation, is a serious condition, and if the inhibition of further appointments of cadets continues, the efficiency of the service must of necessity suffer because of an insufficient number of officers to perform the duties required. It is recommended that the above provision in the sundry civil bill be repealed.

LIFE-SAVING SERVICE.

In another division of this report is a condensed statement showing the operations of the life-saving establishment during the last fiscal year. The record of the service, as therein presented, is in some respects the most noteworthy ever attained by that important branch of the public service. Only one life was lost in each 107 casualties to vessels reported from the various service stations, and but one person perished of each 450 aboard vessels suffering casualty. This splendid showing is of added significance when it is remembered that the 284 stations embraced within the establishment are located at places on our sea and lake coasts where the likelihood of marine disasters is greatest, and, furthermore, that the season of storms during the past year was one of exceptional length and severity, furnishing numerous occasions that taxed the resources and tried the mettle of the station crews to an unusual extent.

Such a record is a fine testimonial to the efficiency of the life-saving corps. The achievements of this alert body of something like 2,000 men have placed our Life-Saving Service in the front rank of humanitarian institutions. This distinction has not been gained, however, without the sacrifice of health, and even of life itself, on the part of many members of the corps. The majority of those who become disabled in the line of duty have families, and few indeed have any income or means of livelihood after being turned out to make room for the sound men that the arduous work of the service demands. It is a serious matter that our government has not made adequate provision for these incapacitated ones, many of whom are veterans of thirty years' service.

From time to time in years past bills calculated to do justice to the life-saving crews, and at the same time conserve the interests of the government, have been introduced in Congress. None has so far been enacted, however. Two years ago I discussed at length the need of such legislation in a report made to Congress upon a bill then pending. I will not here repeat the arguments presented at that time in support of the measure. I would fail to do my duty, however, if I did not again press the matter upon the attention of Congress, since some action of the sort is vitally essential to the welfare of the service.

SECRET SERVICE.

All reason for the limitation of our Secret Service to the work of preventing counterfeiting having passed out, and the Congress in the last two sessions having, at the urgent request of this Department, adopted the opposite policy though in a restricted way, I sincerely hope and recommend that the activities of this important service may now be made to include all of the interests and services

of the Treasury Department. I should be glad to see the activities extended beyond the Department; but suggest only that the service may work generally within it. I fancy it would be difficult to argue that the usefulness and the help of this highly disciplined service should not be enjoyed in all exigencies of the Department of which it is itself a part; and I sincerely trust that Congress, at the present session, will give to the Department the full benefit of a service which belongs to it.

CHIEF CLERK'S OFFICE.

The reorganization of the Chief Clerk's office and its restoration to the executive work of the Department have been amply justified by the facilities it has afforded in tying together the units of the Department into a departmental organization, and in carrying forward and giving important aid both to the daily routine and to the inauguration of improvements throughout the service.

DISBURSING CLERK.

The present disbursing clerk's office of the Treasury Department was made by a consolidation of four disbursing offices; and to this consolidation has been added considerable volumes of new work, due to the changes of system in the Department. It is gratifying to be able to state that notwithstanding these new conditions the work of the Disbursing Clerk is in a satisfactory state in every respect.

GENERAL SUPPLY COMMITTEE.

The establishment of such a large business organization as the General Supply Committee, which was committed to the charge of the Secretary of the Treasury by act of Congress, has been a matter of difficulty. It has received, and is receiving, a great deal of close attention from the Treasury Department, and from the members of the able committee themselves. I am sure the General Supply Committee should be a permanent institution—and is within the line of correct business. On the other hand, I feel it may need more legislation in order to make it all that Congress and the Executive Department wish it to become.

One thing seems to be very necessary at once, and that is a provision by Congress for the establishment of a clerical force for this Committee. At present it is dependent upon details from the various departments. It can be readily seen that that prevents a trained and permanent clerical force. And I commend this subject to the attention of Congress.

EXTENSION OF CIVIL SERVICE.

In repeated communications to Congress or committees, I have urged the inclusion within the classified service of all collectors of customs, surveyors of customs, naval officers, appraisers of mer-

chandise, assistant appraisers of merchandise, collectors of internal revenue, and all like officials of the Department whose appointments require confirmation by the Senate. These recommendations of the Treasury Department are included in the larger proposal—covering all the Departments—made by President Taft, and are a part of a progressive and enlightened policy of his administration.

CIVIL PENSION SYSTEM.

I beg to repeat my numerous recommendations for a retirement provision for classified civil employes. As I have said before, ours is the only one of the great governments of the world that has not adopted this policy. And the policy has spread and is constantly spreading among private employers. Therefore, the reluctance of Congress to adopt a policy that is almost universally believed in, and which is part of the progressive humanitarian movement must sooner or later give way. I wish it might be soon. The entire country is so interested in humanitarian legislation, and the national parties are so eager to recognize their obligations toward humanitarian projects in general, that it seems that this particular humanitarian project cannot be rejected much longer. It concerns a very large and growing body of our population, which, like all the people, is entitled, at the hands of the government, to the results of modern thought. Moreover, the cost to the government of what I believe will prove to be the best, most humane and most enlightened system would be little or nothing. I make this final appeal as Secretary of the Treasury in behalf of this wise, generous and almost costless legislation, believing that it is essential not only to progressive government but equally to administrative efficiency. Final efficiency and economy of administration is, in my judgment, impossible without a system of civil service retirement.

THE NEW NICKEL.

A new five-cent piece will shortly be issued with designs that will again assist the art standards of our coinage. Coins have always aimed to be works of art, both in ancient and modern times. We do not hope, under present conditions, to equal the coins of the great ancient periods. The artists then had a far greater opportunity, because the coins did not have to be stacked. Notwithstanding our practical limitations, however, modern coins can still be immensely interesting and beautiful; and the designs for the new nickel will give this coin a place with the best modern work.

NEW CURRENCY.

Both the Government and bank currency is unnecessarily expensive and inconvenient—and is filled with incongruities. We hope to complete plans for a distinct improvement and to secure a large economy. These plans cannot be carried out fully within this administration.

NEW BUILDINGS FOR THE DEPARTMENTS OF STATE, JUSTICE AND COMMERCE AND LABOR.

The new buildings for the Departments of State, Justice, and Commerce and Labor, I again commend to the attention of the Congress. There is every reason in favor of these buildings; and I hope the Congress will make it possible for their construction to be started at the earliest practical time.

OLEOMARGARINE.

It is encouraging to believe that the oleomargarine question has at last been sufficiently threshed out to be ready for legislation. The legislation proposed will add a large annual sum—probably $2,000,000 a year—to the revenues; and will eradicate at the same time, and with a large saving of administrative cost, a mass of industrial and commercial corruption whose existence is a disgrace to our laws, and which could have been removed years ago almost by the scratch of a pen. The Secretary of the Treasury and the Commissioner of Internal Revenue have been confronted, during this entire administration, and before, with a most serious problem in the vain and impossible effort to administer the present oleomargarine law with anything like necessary results, because the law itself is radically wrong. It is wrong in ways that are perfectly well known; and the remedies are plain and simple and just to everybody. There are no more putrid conditions with which the Government has to deal. The frauds themselves and the corrupt state of much of the business—for all of which the Government is responsible—are far and away the most important considerations in the case.

The issue is a moral one. The revenue side of it is secondary—and yet even since I began calling attention to the subject the nonaction of Congress has cost the Treasury somewhere from six to ten millions of dollars.

The proposed cure in this case would actually benefit everybody concerned. The notion which has been entertained that the new law would injure the legitimate interests of the dairy people is without any foundation whatever. The legitimate and fair interests of butter would be enhanced by the prohibition of unfair and fraudulent competition. And on the other hand a wholesome and cheap article of food—in these days of the high cost of living—would be within reach of the people of moderate means at honest prices; because oleomargarine would be sold not as butter but as oleomargarine, at the price of oleomargarine.

COLORED TEAS.

The Department has had a vexed experience in its attempt to exclude colored teas. When teas are colored it is in the main with Prussian blue; and though we have been drinking colored teas for a

long time the practice of coloring is out of harmony with the spirit of the pure food law and against the general preference of the people. And this is a matter that would come up for action in the Agricultural Department if it could not be successfully attended to by the Treasury Department. The laws commit to the Treasury Department the question of the admission of teas; and it is its duty and practice to yearly establish standards by which teas are admitted. The object of the law is to exclude impure and unwholesome tea. The suggestion to exclude colored teas came to the Department in 1911 from the Tea Board—which is appointed annually by the Secretary of the Treasury to aid him in establishing the standards—and was in accordance with the almost unanimous sentiment of the tea merchants. The first regulations as to colored teas went into effect May 1, 1911, and it early developed that there would have to be a chemical test adopted by the Department which would be the same at all ports. The test, which was the best that could at that time be devised by chemists, was approved by the Tea Board and all the important tea importers who could be consulted, and was adopted by the Department in the fall of 1911. It was claimed afterward that this formula did not detect every bit of coloring matter. It, however, was the best chemical formula known to detect artificial color in teas, had been approved by everybody, had been adopted by the Department, published in this and all exporting foreign countries and had become in moral effect a contract between the Treasury Department and the tea trade of the world for that season. The Department, therefore, adhered to it, though later—and much too late—an opposition grew up which the Treasury Department was obliged to disregard. However, when preparing for the new season—the season of the present year—we sought to improve the test; and a new one—called the Read Test—was found in the Agricultural Department. A new Tea Board was appointed for the year 1912; and it was on its recommendation, made after elaborate experiments and investigation, that the Read Test was accepted by the Department. It was not, however, accepted until after it had been approved by all the members of the tea trade in the different parts of the country to whom it could be submitted; nor until it was clear that there was no opposition to it anywhere in evidence. This new test is in turn being attacked. The attack now is made because the test is too certain, while before it was made because it was not certain enough.

As to the Read Test, I have no reason to question its fairness and accuracy; and if it is finally set aside the alternative is to have the matter handled by the Pure Food Bureau of the Agricultural Department.

OPIUM.

It is of great importance that Congress should give its attention to the opium situation in this country; and do at least all that has been proposed by the concert of the State and Treasury Departments. The situation is horrible. The smuggling is very great; and is carried on by methods and under circumstances that make the administration of the law most difficult, inadequate and unpleasant. The situation is even worse than the oleomargarine one. It is extremely demoralizing; and is largely defeating the enlightened policy of the Government with respect to the opium traffic and to the opium habit—and preventing America from doing its full share of a great international duty. Much consideration has been given to the practical problems by our Department and the State Department; and the results to date have been reported to Congress. With all we can do—and much, of course, is being done in the way of repressing and punishing the illegal traffic—the policy of the Government and the wishes of the people cannot be carried out with any degree of thoroughness with the laws as they are now. I hope the Congress will become actively interested in this opium problem, at any rate to the extent of giving to the executive departments the aids which have been asked.

CONSOLIDATION OF BUREAUS.

I am satisfied that the expectation some people have that large economies and better administration can be secured by the consolidation of bureaus from different departments, is very excessive. The idea at first sight is taking. It has, however, a superficial quality. It is undoubtedly true that there are cases where an improvement can be made by consolidating one or two bureaus, either within one department or taken from two departments. For example, the Revenue Cutter Service and the Life Saving Service could be joined. Both services desire it and both have from the beginning been interlaced and to a certain degree identical—and both understand the matter better than anybody else. But such instances are very rare; and the expectation that there are a good many is not correct. The notion that all the departments can be purely homogeneous is beyond the possibilities; nor would that be especially desirable if it were possible. It is highly desirable and even essential that a bureau or service should be homogeneous; but it is not at all necessary that a great department should be. And there is far better opportunity for an important bureau or service to be homogeneous—and a better chance of its independent and vigorous life—in a large general department than in a combination of bureaus. Take for example the Public Health Service. That now has a head and organization of its own and individuality of its own—and stands alone face to face with its own work only; and

practically the only association of the head of the department with a service like the Public Health Service or the Revenue Cutter Service is to render assistance to that service when it cannot get assistance in any other way, and to give it protection when it cannot otherwise be protected; and, finally, to make sure—as there must be somewhere somebody to make sure—that the right men are in charge of the work. The statement made the other day by a well known municipal health officer that the Treasury Department is apt to take only the money view of public health is a conspicuous evidence of the insufficient consideration given the subject. This Public Health Service can and will develop, without interruption, to the full boundaries of its own province if it is given the comparatively small appropriations that are required. Then, after the development, which nothing now obstructs, its form of organization can be reconsidered. Meanwhile, it would be a great mistake to complicate this distinctive, clear cut, comprehensive and independent work with any other work—and especially to associate it with other bureaus which have their own independent existence and reason for existence; because this would bring it into relations, which, to say the least, it does not need, and would forfeit, in any plan that has been suggested, its actual independence. It would not absorb but would be absorbed.

THE CORPORATION TAX AND PUBLICITY.

Ever since the corporation tax was inaugurated there has been a pressure, more or less constant, to make public, under one excuse or another, the tax returns of private corporations. Both the Secretary of the Treasury and the Commissioner of Internal Revenue have set their faces from the beginning against the policy of dealing with the private affairs of private corporations as though they were public corporations with regard to which the public has a right to be informed. A public corporation is one whose securities are dealt in by the public and whose earnings are, therefore, a matter of public interest and the knowledge of which is a public right. A private corporation is one which is incorporated simply for some of the private conveniences of incorporation, such as the continuity of ownership and the continuity of life, but which, in all essentials, is not different from a private partnership. Its securities are not offered to the public and, therefore, the public has no right to invade its privacy. Public corporations in order to enjoy their standing with the public at large, forego the privileges of privacy; but private corporations have every right to their privacy. And privacy is one of the privileges and sanctities of private life worth preserving. Apart from these considerations, however, it seems to the Treasury Department to have been a distinct presumption of the corporation tax law that private corporations were to be protected in their own character; and Congress later expressed itself almost to that effect.

Moreover, the revenue from this tax is materially involved in the faithfulness with which the Government preserves the confidential character of the returns. Other assessing and collecting bodies are far less successful in securing actual bona fide returns than the Treasury Department; and this is because of the rigidly confidential character of its dealings. And just as soon as we shall abandon the confidential nature of the corporation tax returns of private corporations, just that soon we shall fall back to the conditions under which the state and city and county taxing bodies assess and collect their taxes.

A SUPERVISOR OF THE EXPRESSIONS OF LAWS.

It is again with diffidence that I recommend the establishment of a bureau associated exclusively with the work of legislation. In administering, however, the laws with which the Treasury Department has to do, I have become greatly impressed with the need of a competent critical revision of the language of laws, with the mere view of making the expression certain and simple. I cannot fail to recognize that this is a large concern of the executive branch of the Government, and a matter of large importance to the people. In the first place, if the language of all the laws, before the laws are finally passed, should be duly considered by a competent bureau, the interpretation of these laws would be a far simpler and more certain matter both for the executive and the judicial branches of the Government. Undoubtedly a large economy would be secured, much greater promptness of government action would ensue, and a great volume of review and litigation would be saved. It is conceivable that the decisions in the Treasury Department alone could be cut in two, if the expressions of the laws with which it has to do were rendered more clear, certain and undebatable. It is in the interest of the Treasury Department that I take the liberty of recommending a bureau of supervision of the language of laws.

TARSNEY ACT.

The repeal of the Tarsney Act was received with great regret by the Treasury Department, and by great numbers of people who are especially interested in the art and fitness of government buildings. Our Federal Government is the largest builder of buildings ever known in the world—and its building enterprises are to be far more important still; and the fact that it builds in every part of our great country gives it an unexampled influence upon the architectural art of the entire people. It cannot avoid affecting in a pronounced degree the architectural taste, knowledge, and enjoyment of the nation. It cannot avoid affecting the growth of good architecture in all communities; for the effect and influence of our building operations are completely nationalized. The mere facts nationalize this

influence. The Government, therefore, enjoys in its building operations a tremendous opportunity for good, in the judgment of all who regard architecture as one of the important factors of the higher civilization. This opportunity is really unexampled. Now the elimination from the service of the Government of the knowledge, gifts and inspirations of all architects except those confined within the Treasury building reduces our architectural dimensions to those of a single architect's office, and limits us to the architectural control of one man; whereas such continual building as we do, such opportunities of influence upon all the building in the country as we have, such responsibilities to the architecture of the nation as we cannot relieve ourselves of, demand that the Government should have at its disposal every bit of architectural ability that the nation possesses. To my mind it is absurd to believe that any single architectural office, whether a government office or any other, ought to design every one of the large number of Government buildings turned out annually, when those buildings are all charged with a mission of architectural education to every part of the country. No supervising architect and no private firm ever existed to whom such a great public duty could be properly committed. The Treasury Department is doing excellent architectural work. Under this administration the Supervising Architect's office has been revised. It has not only been economized largely, not only has its cost of operation been reduced, but both its efficiency and its architectural spirit have been distinctly confirmed and advanced. And whatever a Government architectural office ought to be expected to do, it is competent to do. But, as I have said, no single architectural office, no single set of inspirations, no single body of knowledge, no one set of designers, ought ever to be charged with so great a work and so grave a responsibility as the entire building of the Government; and no architect's office, such as this or any other, should be thrown in upon itself or should be taken out of constant association and competition with all the other successful architects and architectural offices. The Government architect—like any other successful architect—needs the touch with all the great architectural activity of the country; and to be in constant relation with all the architectural thought and gifts of the country. Nor is there any question of expense that need stand in the way. It can easily be arranged, and if the Department had been permitted it would have been arranged so that it would not have cost the Government any more to have certain of its buildings designed with the broad aid of the architectural world. This could have been accomplished notwithstanding the fact that under the improvements we have inaugurated the cost of the work of the Government's own office has been reduced. I hope, therefore, that the Congress will reconsider its action of the last session, and restore to

the Government the privilege of employing the architects of the country in, at least, the comparatively few instances where it was the practice to employ them.

PROTECTION OF THE PRESIDENT-ELECT.

In accordance with precedent, it was thought to be proper—and it was also thought to be necessary—to afford Secret Service protection to the President-Elect; and this has been done. I suggest, however, that as the authority for this is not specifically stated in the law the omission be supplied by Congress.

CONTINGENT FUND.

I commend the estimate for the Contingent Fund for the Secretary of the Treasury very cordially. This is for the benefit of my successor. I think it would be a great business mistake and a great mistake in general, to change the new policy of providing a contingent fund for the Secretary of the Treasury. The Congress reduced the Contingent Fund this year; but I hope it will raise it again to at least $50,000 for the incoming administration.

THE COMMITTEE ON EXPENDITURES IN THE TREASURY DEPARTMENT.

The Treasury Department has been aided by the fair investigations and sincere inquiries of the House Committee on Expenditures in the Treasury Department. In its interest in department betterments, and in its advice and criticism, this Committee has shown its interest in every effort of the Department along the lines of improvement. Its continued activity is among the best things I can wish for the incoming administration of the Department.

ACKNOWLEDGMENT.

I must not conclude this final report as Secretary without making my acknowledgments to the men in the Treasury Department—in and out of the Classified Service—without whose aid and enthusiasm it would have been wholly impossible to make the improvements of the last four years. We were able to organize a corps of remarkable men who had the progressive spirit; and these men, together with some whom we called in from the outside, are a body with whom I have felt it a great honor to be associated. Their work has been strong work, and singularly unselfish; and they will have enabled me to turn over to my successor a Department that is dominated by active public spirit. Of course, not everybody has sympathized with the improvements; and not everybody has been diligent in them. But it is wonderful that such a multifarious department covering the whole country should have shown such widespread readiness to change and improve.

FINANCES.

I have the honor to call attention now to the following statements showing receipts, disbursements, estimates, and the condition of the Treasury:

RECEIPTS AND DISBURSEMENTS.

Fiscal year 1912.

The receipts and disbursements of the Government during the fiscal year ended June 30, 1912, were as follows:

(See details on pp. 30 to 35.)

GENERAL FUND.

Receipts into the general fund, including various trust-fund receipts, but excluding postal revenues:		
Customs		$311,321,672.22
Internal revenue—		
Ordinary	$293,028,895.93	
Corporation tax	28,583,303.73	
		321,612,199.66
Sales of public lands		5,392,796.75
Miscellaneous		53,451,796.74
Total		691,778,465.37
Disbursements from the general fund for current expenses and capital outlays, including various trust-fund disbursements, but excluding postal and Panama Canal disbursements:		
For civil establishment, including foreign intercourse, public buildings, collecting the revenues, District of Columbia, grants from the Treasury for deficiencies in the postal revenues, and miscellaneous expenses	173,824,989.29	
For military establishment, including rivers and harbors, forts, arsenals, seacoast defenses, and miscellaneous	148,795,421.92	
For naval establishment, including construction of new vessels, machinery, armament, equipment, improvement at navy yards, and miscellaneous	135,591,955.72	
For Indian service	20,134,839.80	
For pensions	153,590,456.26	
For interest on the public debt	22,616,300.48	
Total		654,553,963.47
Excess of receipts (*carried forward*)		37,224,501.90
Brought forward		37,224,501.90
Panama Canal disbursements:		
Disbursements for canal	35,327,370.66	

Issues and redemptions of public debt:		
Proceeds of bonds issued on account of Panama Canal—		
Principal of bonds	$32,358,366.00	
Premiums thereon	830,738.15	
Total from canal bonds	33,189,104.15	
Excess of canal disbursements, provided from general fund		2,138,266.51
		35,086,235.39
National-bank note fund—		
Redemptions	$28,527,711.50	
Receipts	20,078,365.00	
Excess of redemptions over receipts		$8,449,346.50
		26,636,888.89
Postal savings—		
Proceeds of bonds issued on savings deposits		459,280.00
		27,096,168.89
Miscellaneous redemptions—		
Funded loan of 1907	116,350.00	
Miscellaneous items	4,266.03	
Total		120,616.03
Total excess of receipts into general fund over disbursements therefrom		26,975,552.86
General-fund balances:		
Balance in general fund June 30, 1911		140,176,926.13
Excess of general-fund receipts for year		26,975,552.86
Balance in general fund June 30, 1912		167,152,478.99

SUMMARY OF GENERAL-FUND TRANSACTIONS.

Fiscal year ended June 30, 1912.

	Receipts.	Disbursements.
Ordinary receipts, including various trust-fund receipts, but excluding postal revenues	$691,778,465.37	
Disbursements for current expenses and capital outlays, including various trust-fund disbursements, but excluding postal and Panama Canal disbursements		$654,553,963.47
Panama Canal disbursements		35,327,370.66
Receipts, proceeds of canal bonds	33,189,104.15	
National-bank note fund:		
Receipts	20,078,365.00	
Redemptions		28,527,711.50
Receipts, postal savings bonds	459,280.00	
Miscellaneous redemptions of the public debt		120,616.03
Total disbursements from the general fund		718,529,661.66
Excess of receipts over disbursements		26,975,552.86
Grand totals	745,505,214.52	745,505,214.52

POSTAL SERVICE.

Exclusive of Post Office Department proper, which is included in "civil establishment."

Postal revenue receipts	$246,744,015.88
Postal service paid from postal revenues, exclusive of grants from the Treasury of $1,568,194.88 for deficiencies in the revenues charged in expenses of civil establishment	246,744,015.88

GOLD RESERVE FUND.[1]

United States notes (greenbacks):	
Issues to replace worn and mutilated notes	149,660,000.00
Worn and mutilated notes retired	149,660,000.00
Balance in reserve fund June 30, 1911	150,000,000.00
Balance in reserve fund June 30, 1912	150,000,000.00

TRUST FUNDS.

Reserved against outstanding gold and silver certificates and Treasury notes of 1890.

Issues:		
Gold certificates issued	$355,760,000.00	
Silver certificates issued	411,432,000.00	
Total set aside in trust funds		$767,192,000.00
Redemptions:		
Gold certificates redeemed	310,573,300.00	
Silver certificates redeemed	393,382,000.00	
Treasury notes of 1890 redeemed	317,000.00	
Total redemptions paid out of trust funds		704,272,300.00
Increase in trust funds during year		62,919,700.00
Balances in trust funds June 30, 1911		1,461,615,669.00
Balances in trust funds June 30, 1912		1,524,535,369.00

SINKING FUND.

The securities redeemed on account of the sinking fund, included in general-fund disbursements, were as follows:

Fractional currency	$1,236.03
Seven-thirties of 1864 and 1865	100.00
Compound-interest notes	150.00
Refunding certificates	600.00
Funded loan of 1907	116,350.00
Loan of 1904	200.00
Funded loan of 1891	2,000.00
Total	120,616.03

[1] The redemptions of notes for gold from the reserve fund during the year amounted to $45,498,305. As the notes were at once exchanged for gold, the reserve was maintained at the fixed sum of $150,000,000.

CONDITION OF THE TREASURY JUNE 30, 1912.

The public debt of the United States at the close of the fiscal year, as stated in the debt statement of June 30, 1912, is set forth in detail as follows:

Interest-bearing debt:		
Loan of 1925, 4 per cent	$118,489,900.00	
Loan of 1908–1918, 3 per cent	63,945,460.00	
Consols of 1930, 2 per cent	646,250,150.00	
Panama Canal loan, 2 per cent	84,631,980.00	
Panama Canal loan, 3 per cent	50,000,000.00	
Postal savings bonds, 2½ per cent	459,280.00	
		$963,776,770.00
Debt on which interest has ceased:		
Funded loan of 1891	28,650.00	
Loan of 1904	13,250.00	
Funded loan of 1907	800,350.00	
Refunding certificates	14,050.00	
Old debt	904,150.26	
		1,760,450.26
Debt bearing no interest:		
United States notes (greenbacks)	346,681,016.00	
National-bank notes, redemption account	24,710,831.50	
Old demand notes	53,282.50	
Fractional currency	6,856,154.90	
		378,301,284.90
Total interest and noninterest-bearing debt		1,343,838,505.16
Certificates and notes issued on deposits of coin and silver bullion:		
Gold certificates	1,040,057,369.00	
Silver certificates	481,549,000.00	
Treasury notes of 1890	2,929,000.00	
		1,524,535,369.00
Total debt June 30, 1912		2,868,373,874.16

CASH IN THE TREASURY JUNE 30, 1912.

[From revised statements.]

Reserve fund:			
Gold coin and bullion			$150,000,000.00
Trust funds:			
Gold coin and bullion		$1,040,057,369.00	
Silver dollars		481,549,000.00	
Silver dollars of 1890		2,929,000.00	
			1,524,535,369.00
General fund:			
In Treasury offices—			
Gold coin	$17,406,895.22		
Gold certificates	96,621,751.00		
Standard silver dollars	13,460,446.00		
Silver certificates	12,324,600.00		
United States notes	8,983,695.00		
Treasury notes of 1890	13,430.00		
National-bank notes	15,643,298.65		
Certified checks on banks	723,316.13		
		165,177,432.00	

General fund—Continued.			
Deduct current liabilities—			
National-bank 5 per cent fund	$24,349,434.05		
Less notes in process of redemption	24,349,434.05		
Outstanding warrants and checks	7,861,635.30		
Balances to credit of disbursing officers	48,052,899.71		
Post Office Department balances	1,791,544.55		
Miscellaneous items	8,728,927.04		
		$66,435,006.60	
Working balance in Treasury offices			$98,742,425.40
In national-bank depositories—			
To credit of the Treasurer of the United States	$37,953,488.51		
To credit of mints and assay offices	172,101.12		
To credit of disbursing officers	10,380,596.14		
		48,506,185.77	
In treasury of the Philippine Islands—			
To credit of the Treasurer of the United States	1,084,570.75		
To credit of United States disbursing officers	3,459,626.11		
		4,544,196.86	
		53,050,382.63	
Deduct current liabilities—			
Outstanding warrants	847,821.54		
Balances to the credit of disbursing officers	13,840,222.25		
		14,688,043.79	
Balances in banks and in treasury of Philippine Islands			38,362,338.84
In Treasury offices—			
Silver bullion (at cost)		$2,071,857.69	
Subsidiary silver coin		25,554,006.86	
Fractional currency		301.68	
Minor coin		2,386,924.87	
Awaiting reimbursement, United States bonds and interest paid		34,623.65	
			30,047,714.75
Total balance in general fund June 30, 1912			167,152,478.99
Total balance in general fund June 30, 1911			140,176,926.13
Increase in 1912			26,975,552.86

Comparison of receipts, fiscal years 1911 and 1912.

	1912	1911	Increase, 1912.	Decrease, 1912.
Customs	$311,321,672.22	$314,497,071.24		$3,175,399.02
Internal revenue:				
Ordinary	293,028,895.93	289,012,224.20	$4,016,671.73	
Corporation tax	28,583,303.73	33,516,976.59		4,933,672.86
Sales of public lands	5,392,796.75	5,731,636.88		338,840.13
Consular fees	1,700,876.45	1,634,342.30	66,534.15	
Chinese indemnity	105,081.41	533,473.49		428,392.08
Profits on coinage, bullion deposits, etc	6,970,159.43	5,272,346.64	1,697,812.79	
Payment of interest by Pacific railways	8,046.95	8,766.88		719.93
Tax on circulation of national banks	3,637,008.78	3,503,502.48	133,506.30	
Interest on public deposits	40,675.01	42,619.61		1,944.60
Night services, customs service	234,084.84	23,591.30	210,493.54	
Customs fees, fines, penalties, etc	1,387,114.94	3,574,031.62		2,186,916.68
Navy hospital and clothing funds, fines and forfeitures, etc	1,326,013.43	1,724,910.47		398,897.04
Sales of ordnance material, etc	224,732.28	181,566.27	43,166.01	
Land fees	1,252,550.97	1,520,750.01		268,199.04
Fees on letters patent	2,076,399.85	1,976,064.21	100,335.64	
Depredations on public lands	161,070.71	220,393.98		59,323.27
Proceeds of town sites, Reclamation Service	15,224.10	69,468.80		54,244.70
Forest reserve fund	2,158,344.99	2,018,830.67	139,514.32	
Immigrant fund	3,336,519.33	3,669,816.00		333,296.67
Naturalization fees	244,442.25	288,034.00		43,591.75
Proceeds of sealskins	385,862.28	403,946.94		18,084.66
Alaska fund	225,639.43	175,490.59	50,148.84	
Judicial fees, fines, penalties, etc	1,274,839.66	749,652.92	525,186.74	
Sales of Government property	2,782,028.47	1,978,802.73	803,225.74	
Rent of public buildings, grounds, etc	204,342.59	207,883.62		3,541.03
Sales of lands and buildings	33,201.30	1,133,702.38		1,100,501.08
District of Columbia, general receipts	7,774,381.09	7,060,080.10	714,300.99	
Panama Canal, rentals, work done, etc	1,251,610.00	639,945.16	611,664.84	
Panama R. R. Co., principal and interest of notes		179,900.63		179,900.63
Reimbursements on account of expenditures made for Indian tribes	829,925.88	5,702,566.90		4,872,641.02
Miscellaneous	2,556,513.89	2,005,915.33	550,598.56	
TRUST FUNDS.				
Department of State:				
Miscellaneous trust funds	1,149,880.22	319,254.23	830,625.99	
War Department:				
Army deposit fund	1,869,401.54	2,070,841.53		201,439.99
Soldiers' Home permanent fund	446,597.88	627,212.88		180,615.00
Navy Department:				
Navy deposit fund	457,003.92	439,168.60	17,835.32	
Marine Corps deposit fund	148,922.20	140,379.00	8,543.20	
Interior Department:				
Deposits for surveying public lands	71,606.98	110,175.68		38,568.70
Proceeds of Indian lands	3,264,763.79	4,380,094.49		1,115,330.70
Indian moneys, proceeds of labor	3,079,440.57	3,083,421.90		3,981.33
Miscellaneous trust funds	59,687.02	92,417.58		32,730.56
Personal funds of patients, Government Hospital for Insane	31,588.13	33,984.56		2,396.43
Pension money, Government Hospital for Insane	91,107.07	91,360.37		253.30
District of Columbia:				
Miscellaneous trust fund deposits	448,381.62	333,915.52	114,466.10	
Washington redemption fund	110,383.43	104,087.11	6,296.32	
Police and firemen's relief funds	99,291.39	107,419.38		8,127.99
Other frust funds	51,253.18	20,504.66	30,748.52	
Total	691,902,667.88	701,212,542.43	10,671,675.64	19,981,550.19
Deduct—				
Moneys covered by warrant in year subsequent to the deposit thereof	461,792.56	301,960.00	159,832.56	
	691,440,875.32	700,910,582.43	10,511,843.08	19,981,550.19
Add—				
Moneys received in fiscal year but not covered by warrant	337,590.05	461,792.56		124,202.51
Ordinary receipts	691,778,465.37	701,372,374.99	10,511,843.08	20,105,752.70

Comparison of receipts, fiscal years 1911 and 1912—Continued.

	1912	1911	Increase, 1912.	Decrease, 1912.
Public debt:				
Proceeds of bonds, Panama Canal	$32,358,366.00	$17,641,634.00	$14,716,732.00	
Premium on sale of bonds	830,738.15	460,536.04	370,202.11	
Panama Canal bond receipts	33,189,104.15	18,102,170.04	15,086,934.11	
Postal savings bonds	459,280.00		459,280.00	
National-bank note fund	20,078,365.00	40,232,555.00		$20,154,190.00
Public debt receipts	53,726,749.15	58,334,725.04	15,546,214.11	20,154,190.00
Total receipts, exclusive of postal	745,505,214.52	759,707,100.03	26,058,057.19	40,259,942.70
Postal revenues	246,744,015.88	237,879,823.60	8,864,192.28	
Total receipts, including postal	992,249,230.40	997,586,923.63	34,922,249.47	40,259,942.70

Comparison of disbursements, fiscal years 1911 and 1912.

	1912	1911	Increase, 1912.	Decrease, 1912.
CIVIL ESTABLISHMENT.				
Legislative:				
Senate	$1,847,946.28	$1,995,784.51		$147,838.23
House of Representatives	4,740,722.59	5,065,989.79		325,267.20
Legislative, miscellaneous	48,480.89	51,162.92		2,682.03
National Monetary Commission	47,102.26	74,981.34		27,879.08
Immigration Commission		48,772.32		48,772.32
Public Printer	5,423,583.19	5,438,335.47		14,752.28
Library of Congress	593,282.38	642,809.62		49,527.24
Botanic Garden	28,832.02	27,002.31	$1,829.71	
Total legislative	12,729,949.61	13,344,838.28	1,829.71	616,718.38
Executive proper:				
Salaries and expenses	643,685.56	462,458.78	181,226.78	
Civil Service Commission	280,293.01	272,144.15	8,148.86	
Total executive proper	923,978.57	734,602.93	189,375.64	
Department of State:				
Salaries and expenses	526,985.49	586,304.10		59,318.61
Foreign intercourse—				
Diplomatic salaries	804,591.06	751,161.81	53,429.25	
Consular salaries	1,528,666.97	1,302,449.81	226,217.16	
Contingent expenses of foreign missions	301,787.50	338,936.93		37,149.43
Contingencies of consulates	455,155.75	458,827.76		3,672.01
Emergencies arising in the Diplomatic and Consular Service	5,752.40	144,649.67		138,897.27
Miscellaneous items	652,328.27	938,068.07		285,739.80
Trust funds	401,116.59	381,777.14	19,339.45	
Total Department of State	4,676,384.03	4,902,175.29	298,985.86	524,777.12
Treasury Department:				
Salaries and expenses	4,128,138.35	4,294,377.54		166,239.19
Independent Treasury	678,938.93	712,576.89		33,637.96
Mints and assay offices	821,615.43	767,899.53	53,715.95	
Internal-Revenue Service—				
Expenses of collecting	5,059,286.49	5,063,032.66		3,746.17
Refunds and reliefs	605,714.50	980,709.78		374,995.28
Customs Service—				
Collecting customs revenue	[1] 10,234,894.82	10,837,238.43		602,343.61
Detection and prevention of frauds	164,347.15	178,015.81		13,668.66
Refunding excess of deposits	4,863,886.80	4,802,233.36	61,653.44	
Debentures or drawbacks	4,681,994.84	6,612,589.47		1,930,594.63
Compensation in lieu of moieties	100,422.92	117,734.66		17,311.74
Miscellaneous refunds and reliefs	16,615.74	27,719.59		11,103.85
Revenue-Cutter Service	2,318,630.08	2,222,227.09	96,402.99	
Revenue vessels and wharf	628,628.86	154,612.56	474,016.30	

[1] Disbursements to June 30, 1912. Increased by subsequent payments to Nov. 1, 1912, of approximately $360,000.

Comparison of disbursements, fiscal years 1911 and 1912—Continued.

	1912	1911	Increase, 1912.	Decrease, 1912.
CIVIL ESTABLISHMENT—continued.				
Treasury Department—Continued.				
Public Health Service	$1,729,062.69	$1,596,749.39	$132,313.30	
Epidemic diseases	308,829.75	290,996.56	17,833.19	
Life-Saving Service	2,350,840.43	2,326,493.13	24,347.30	
Engraving and Printing	3,595,865.06	3,505,640.66	90,224.40	
Paper, etc., for United States securities	429,289.46	394,632.99	34,656.47	
Public buildings—				
Sites, construction, and equipment	18,034,385.07	16,287,525.82	1,746,859.25	
Current maintenance	4,709,021.00	4,518,431.74	190,589.26	
Miscellaneous items	117,618.24	514,298.48		$396,680.24
Special funds—				
Philippine special funds	125,308.71	197,213.30		71,904.59
Night services, Customs Service	238,687.97	4,532.19	234,155.78	
Total Treasury Department	65,942,023.34	66,407,481.63	3,156,767.63	3,622,225.92
[1]War Department:				
Salaries and expenses	1,923,988.94	1,905,653.41	18,335.53	
Public buildings and grounds	329,484.81	315,471.19	14,013.62	
Total War Department	2,253,473.75	2,221,124.60	32,349.15	
Navy Department:				
Salaries and expenses	797,704.03	791,141.80	6,562.23	
Interior Department:				
Salaries and expenses	5,027,591.56	5,026,851.90	739.66	
Public lands service	3,524,475.71	3,784,960.28		260,484.57
Geological survey	1,266,147.12	1,231,115.38	35,031.74	
National parks	168,134.25	125,666.72	42,467.53	
Beneficiaries	712,644.88	836,604.18		123,959.30
Meridian Hill Park, District of Columbia	447,383.92		447,383.92	
Colleges for agriculture	2,500,000.00	2,250,000.00	250,000.00	
Protecting lands and property in the Imperial Valley	169,360.84	725,250.34		555,889.50
Office Building, House of Representatives		56,539.12		56,539.12
Office Building, Senate	13,000.00	202,993.56		189,993.56
Heating, lighting, and power plant, congressional buildings	80,129.79	152,178.75		72,048.96
Capitol building and grounds	194,195.13	240,753.63		46,558.50
Miscellaneous items	279,243.18	383,414.97		104,171.79
Special funds—				
Reclamation fund	8,980,014.45	7,314,299.96	1,665,714.49	
Five, three, and two per cent funds, sales of lands	247,855.76	276,222.17		28,366.41
Revenues of national parks and Hot Springs, Ark	99,825.37	90,966.40	8,858.97	
Miscellaneous special funds	50,829.94	47,068.24	3,761.70	
Trust funds—				
Deposits for surveying public lands	207,923.19	233,552.49		25,629.30
Miscellaneous trust funds	67,542.73	75,877.91		8,335.18
Total Interior Department	24,036,297.82	23,054,316.00	2,453,958.01	1,471,976.19
Post Office Department:				
Salaries and expenses	1,597,691.58	1,602,882.62		5,191.04
Deficiency in postal revenues	1,568,194.88	[1] 133,784.29	1,701,979.17	
Establishing postal savings depositories	287,553.80	56,812.00	230,741.80	
Miscellaneous items	7,791.62	286,683.66		278,892.04
Total Post Office Department	3,461,231.88	1,812,593.99	1,932,720.97	284,083.08
Department of Agriculture:				
Salaries and miscellaneous	[2] 6,437,372.31	3,554,778.73	2,882,593.58	
Expenses, Animal Industry	1,271,413.07	1,116,597.06	154,816.01	
Meat inspection, Animal Industry	3,003,165.17	2,611,549.13	391,616.04	
Expenses of Plant Industry and cotton-boll weevil investigation	1,382,915.04	1,110,980.43	271,934.61	
Purchase of seeds	295,184.94	295,251.43		66.49
Forest Service	[3] 2,763,402.35	5,535,915.90		2,772,513.55

[1] Excess of repayments over disbursements.

[2] Increase largely due to transfer of salaries of employees of Forestry Service ($2,318,000) from the lump-sum appropriation for General Expenses, Forest Service, to the statutory roll, Salaries, Department of Agriculture.

[3] See note [2].

Comparison of disbursements, fiscal years 1911 and 1912—Continued.

	1912	1911	Increase, 1912.	Decrease, 1912.
CIVIL ESTABLISHMENT—continued.				
Department of Agriculture—Continued.				
Acquisition of lands for protection of watersheds, navigable streams	$111,518.70		$111,518.70	
Enforcement food and drugs act	517,336.69		517,336.69	
Agricultural experiment stations	1,588,434.24	$1,572,455.10	15,979.14	
Weather Bureau	1,608,347.30	1,354,589.92	253,757.38	
Special funds—				
Payments to States and Territories from National Forests fund	482,376.18	506,194.83		$23,818.65
Cooperative work, forest investigations	4,451.71	5,225.49		773.78
Miscellaneous special funds	5,649.72	2,690.24	2,959.48	
Total Department of Agriculture.	19,471,567.42	17,666,228.26	4,602,511.63	2,797,172.47
Department of Commerce and Labor:				
Salaries and expenses	782,942.31	712,585.40	70,356.91	
Bureau of Labor	185,223.01	178,408.61	6,814.40	
Bureau of Standards	553,708.30	406,197.22	147,511.08	
Census Office	2,274,531.29	6,409,551.68		4,135,020.39
Coast and Geodetic Survey	959,241.27	966,436.51		7,195.34
Lighthouse Establishment	4,956,516.21	5,120,276.06		163,759.85
Bureau of Fisheries	839,483.94	978,102.19		138,618.25
Fish hatcheries	65,472.57	64,963.63	508.94	
Immigration stations	95,910.18	143,924.97		48,014.79
Bureau of Immigration and Naturalization	306,661.67	258,857.64	47,804.03	
Regulating immigration	2,649,651.66	2,577,056.77	72,594.89	
Steamboat-Inspection Service	520,619.18	538,844.24		18,225.06
Miscellaneous items	5,732.72	26,066.96		20,334.24
Special funds—				
Immigration stations	227,612.92	54,278.59	173,334.33	
Miscellaneous special funds	43,691.18	67,892.40		24,201.22
Total Department of Commerce and Labor	14,466,998.31	18,503,442.87	518,924.58	4,555,369.14
Department of Justice:				
Salaries and expenses	1,388,562.50	1,373,588.95	14,973.55	
Salaries of justices, assistant attorneys, etc	1,539,505.25	1,325,359.92	214,145.33	
Court of Claims	68,030.63	70,535.58		2,504.95
Salaries, fees, etc., of marshals	1,380,893.34	1,383,606.48		2,713.14
Fees of witnesses	1,056,845.46	866,914.76	189,930.70	
Salaries and fees, district attorneys	547,588.12	558,920.10		11,331.98
Fees of jurors	1,028,639.60	991,736.59	36,903.01	
Fees of clerks	334,361.27	357,201.35		22,840.08
Fees of commissioners	117,938.64	114,546.19	3,392.45	
Support of prisoners	522,941.58	470,538.99	52,402.59	
Pay of bailiffs	237,134.96	219,531.60	17,603.36	
Miscellaneous expenses, United States courts	500,083.93	491,955.97	8,127.96	
Miscellaneous items	994,474.48	1,284,303.63		289,829.15
Total Department of Justice	9,716,999.76	9,508,740.11	537,478.95	329,219.30
Independent bureaus and offices:				
Interstate Commerce Commission	1,388,203.60	1,318,460.16	69,743.44	
Smithsonian Institution	152,940.37	162,252.08		9,311.71
National Museum	561,695.31	713,080.12		151,384.81
Zoological Park	102,966.62	111,664.88		8,698.26
Territorial governments	183,032.41	250,516.40		67,483.99
Total independent bureaus and offices	2,388,838.31	2,555,973.64	69,743.44	236,878.77
District of Columbia:				
Salaries and expenses	11,610,777.41	11,116,129.95	494,647.46	
Special funds—				
Water department	662,707.64	632,462.23	30,245.41	
Miscellaneous special funds	10,098.68	13,576.88		3,478.20
Trust funds—				
Miscellaneous trust-fund deposits	410,145.24	331,897.03	78,248.21	
Washington redemption fund	113,300.00	100,000.00	13,300.00	
Police and firemen's relief funds	100,276.76	104,762.33		4,485.57
Other trust funds	52,236.73	37,111.22	15,125.51	
Total District of Columbia	12,959,542.46	12,335,939.64	631,566.59	7,963.77
Total Civil Establishment	173,824,989.29	173,838,599.04	14,432,774.39	14,446,384.14

Comparison of disbursements, fiscal years 1911 and 1912—Continued.

	1912	1911	Increase, 1912.	Decrease, 1912.
MILITARY ESTABLISHMENT.				
Pay Department	$45,485,342.73	$45,883,955.15		$398,612.42
Encampment and maneuvers, Army and militia	281,004.69	1,112,471.83		831,467.14
Extra pay, War with Spain	5,735.81	6,952.10		1,216.29
Commissary Department	8,501,166.01	8,936,981.75		435,815.74
Quartermaster's Department	28,927,678.89	33,995,588.60		5,067,909.71
National cemeteries	264,762.33	326,729.89		61,967.56
Medical Department	1,369,995.46	1,880,821.04		510,825.58
Ordnance Department	10,462,609.11	11,693,931.34		1,231,322.23
Engineer Department	4,247,685.82	4,498,343.45		250,657.63
Signal Service	600,686.23	514,797.88	$85,888.35	
Military Academy	566,761.10	878,685.83		311,924.73
Improving harbors	9,974,318.40	9,203,274.07	771,044.33	
Improving rivers	25,575,299.17	24,401,578.77	1,173,720.40	
Military posts	2,852,014.61	4,627,865.48		1,775,850.87
National homes for disabled soldiers	3,878,816.92	3,918,371.41		39,554.49
State homes for disabled soldiers	1,152,432.32	1,221,634.83		69,202.51
Reimbursing States and Territories expenses of troops, War with Spain	32,542.76	214,836.11		182,293.35
Raising the U. S. S. Maine	282,232.12	444,371.70		162,139.58
Judgments, Court of Claims and United States courts	21,551.03	111,596.29		90,045.26
Sufferers from floods, Mississippi and Ohio Valleys	881,638.08		881,638.08	
Soldiers' Home interest account	100,455.79	102,832.91		2,377.12
Miscellaneous items	446,439.80	2,393,085.89		1,946,646.09
Special funds—				
Wagon roads, etc., Alaska fund	152,061.77	206,311.24		54,249.47
Ordnance material, powder, etc	139,778.03	75,986.47	63,791.56	
For rivers and harbors	97,000.00	35,500.00	61,500.00	
Trust funds—				
Pay of the Army, deposit fund	1,848,012.94	2,894,471.86		1,046,458.92
Soldiers' Home permanent fund	647,400.00	555,000.00	92,400.00	
Total Military Establishment	148,795,421.92	160,135,975.89	3,129,982.72	14,470,536.69
NAVAL ESTABLISHMENT.				
Increase of the Navy	29,803,245.74	22,166,410.25	7,636,835.49	
Bureau of Yards and Docks	8,479,179.80	8,331,810.94	147,368.86	
Bureau of Equipment	8,619,441.00	8,974,782.90		355,341.90
Bureau of Navigation	3,218,959.31	3,596,953.28		377,993.97
Bureau of Construction and Repair	8,506,224.25	9,077,574.88		571,350.63
Bureau of Ordnance	12,938,629.91	10,898,485.35	2,040,144.56	
Bureau of Steam Engineering	6,010,212.19	7,052,130.91		1,041,918.72
Bureau of Supplies and Accounts	7,894,616.51	4,211,390.45	3,683,226.06	
Bureau of Medicine and Surgery	460,285.04	711,801.76		251,516.72
Marine Corps	7,328,800.92	7,052,509.38	276,291.54	
Naval Academy	687,509.52	558,665.42	128,844.10	
Pay of the Navy	36,303,561.04	34,349,580.28	1,953,980.76	
Judgments, Court of Claims and United States courts		280,479.35		280,479.35
General account of advances	2,294,316.37		2,294,316.37	
Miscellaneous items	1,080,394.90	1,080,400.35		5.45
Special funds—				
Naval hospital fund	387,273.63	1,026,646.02		639,372.39
Ordnance material (proceeds of sales)	75,407.42	22,507.41	52,900.01	
Fines and forfeitures	959,014.75	704,379.62	254,635.13	
Trust funds—				
Pay, Marine Corps, deposit fund	72,942.00	100,971,61		28,029.61
Pay of the Navy, deposit fund	470,617.73	557,356.00		86,738.27
Prize money	1,323.69	1,392.76		69.07
	135,591,955.72	120,756,228.92	18,468,542.88	3,632,816.08
Deduct repayments in excess of disbursements		818,584.53		818,584.53
Total Naval Establishment	135,591,955.72	119,937,644.39	18,468,542.88	2,814,231.55
INDIAN SERVICE.				
Current and contingent expenses	$984,370.87	$1,000,659.84		$16,288.97
Fulfilling treaty stipulations	708,780.21	995,256.65		286,476.44
Miscellaneous supports	599,820.36	635,330.47		35,510.11
Interest on Indian trust-fund accounts	1,726,047.38	2,401,647.57		675,600.19
Support of Indian schools	3,369,303.71	3,468,341.63		99,037.92
Miscellaneous expenses	3,387,638.34	3,872,874.28		485,235.94
Trust funds	9,358,878.93	8,559,759.00	$799,119.93	
Total Indian Service	20,134,839.80	20,933,869.44	799,119.93	1,598,149.57

Comparison of disbursements, fiscal years 1911 and 1912—Continued.

	1912	1911	Increase, 1912.	Decrease, 1912.
Pensions	$153,590,456.26	$157,980,575.01		$4,390,118.75
Interest on the public debt	22,616,300.48	21,311,334.12	$1,304,966.36	
Total (see note [1])	654,553,963.47	654,137,997.89	38,135,386.28	37,719,420.70
Panama Canal disbursements	35,327,370.66	37,063,515.33		1,736,144.67
Public debt:				
National-bank note fund	28,527,711.50	34,976,840.00		6,449,128.50
Funded loan of 1907	116,350.00	212,550.00		96,200.00
Miscellaneous redemptions	4,266.03	33,946.35		29,680.32
Public debt disbursements	28,648,327.53	35,223,336.35		6,575,008.82
Total disbursements, exclusive of postal	718,529,661.66	726,424,849.57	38,135,386.28	46,030,574.19
Postal service [2]	246,744,015.88	237,660,705.48	9,083,310.40	
Total disbursements, including postal	965,273,677.54	964,085,555.05	47,218,696.68	46,030,574.19

[1] Exclusive of Panama Canal, public debt, and postal service disbursements.
[2] Exclusive of grants from the Treasury for deficiencies in postal revenues for 1912, $1,568,194.88, included in expenses of civil establishment, p. 32.

ESTIMATES.

The total estimates of appropriations for ordinary purposes for the fiscal year ending June 30, 1914, are $732,556,023.03. These are exclusive of the estimates of expenditures for the Panama Canal, which may be paid from bond sales, and those for the postal service, which are repaid from the postal receipts. The estimates of receipts, for the same period, which will be available for the general fund—from which payments on such appropriations must be made—are $710,000,000. The estimates of appropriations for ordinary purposes for 1914 are, therefore, $22,556,023.03 in excess of the estimated revenue. The estimated expenditures for the Panama Canal are $30,174,432.11, and if these expenditures should be paid from the general fund instead of from sale of bonds the total estimates of appropriations for 1914 are $52,730,455.14 in excess of the estimated receipts.

These estimates of appropriations, of course, are based upon conditions that now exist and upon the laws which now prevail; and between now and the end of the fiscal year 1914 much may occur through legislative action to change the basis upon which they are made. There are also included in these estimates items for projected public works the payments for which will not be concluded during the fiscal year in question.

The ordinary receipts during the current fiscal year of 1913 are estimated at $711,000,000, and the ordinary disbursements at $670,800,000, showing an expected excess of receipts of $40,200,000; with the estimated disbursements for the Panama Canal included the disbursements are estimated to exceed the receipts by $1,800,000.

Details of the estimates for the fiscal years 1913 and 1914 follow:

Fiscal year 1913.

The ordinary receipts of the Government for the current fiscal year are estimated upon the basis of existing laws as follows:

From customs	$328,000,000.00	
From internal revenue, ordinary	297,000,000.00	
From corporation tax	29,000,000.00	
From miscellaneous sources	57,000,000.00	
Total estimated ordinary receipts		$711,000,000.00

The disbursements for the same period are estimated as follows:

For the civil establishment	$177,000,000.00	
For the War Department	158,000,000.00	
For the Navy Department	130,000,000.00	
For the Indian Service	18,000,000.00	
For pensions	165,000,000.00	
For interest on the public debt	22,800,000.00	
Total estimated disbursements, unless some anticipation of the appropriations submitted for the fiscal year 1914 should be authorized by Congress for payment this year		670,800,000.00
An excess in ordinary receipts of		40,200,000.00
Panama Canal: Disbursements—To be made from the general fund of the Treasury without sales of bonds this fiscal year		42,000,000.00
An excess of disbursements, including the Panama Canal, of		1,800.000.00

The disbursements for miscellaneous redemptions of the public debt are estimated at $150,000; and the receipts from issues of bonds on account of postal savings are estimated to exceed such redemptions.

Transactions in deposits and redemptions for the national-bank note redemption account, act of July 14, 1890, are excluded from the estimates, no excess of redemptions over deposits for retirement of the notes being anticipated.

POSTAL SERVICE.

The expenditures for the postal service for the year 1913 will approximate $260,938,000, and under normal conditions of business the postal revenues are expected to equal this sum.

Fiscal year 1914.

It is estimated that upon the basis of existing laws the ordinary receipts for the fiscal year 1914 will be:

From customs	$325,000,000.00	
From internal revenue, ordinary	298,500,000.00	
From corporation tax	29,500,000.00	
From miscellaneous sources	57,000,000.00	
Total estimated ordinary receipts		$710,000,000.00

The estimates of appropriations for the fiscal year 1914, as submitted by the executive departments and offices, are as follows:

Legislative Establishment		$7,492,185.50
Executive Establishment:		
Executive proper	$536,990.00	
Department of State	355,620.00	
Treasury Department	11,254,912.00	
War Department	1,983,998.00	
State, War, and Navy Department Building, expenses	162,500.00	
Navy Department	951,250.00	
Department of Interior	5,903,840.00	
Post Office Department	2,014,510.00	
Department of Agriculture	18,287,230.00	
Department of Commerce and Labor	3,881,010.00	
Department of Justice	553,830.00	
Territorial governments	128,750.00	
		46,014,440.00
Judicial Establishment		1,295,560.00
Foreign intercourse		3,965,392.61
Military Establishment		96,409,549.82
Naval Establishment, including increase of the Navy for new and prior Navy building programs, $18,882,579 and $22,284,091, respectively		144,937,313.53
Indian affairs		11,303,316.53
Pensions		185,220,000.00
Public works:		
Legislative	$6,000.00	
Treasury Department, public buildings and works	9,207,700.00	
War Department, exclusive of rivers and harbors	11,537,759.98	
Rivers and harbors	56,766,992.00	
Navy Department	6,526,445.00	
Department of Interior	1,154,559.00	
Department of Commerce and Labor	2,549,100.00	
Department of Justice	473,500.00	
		88,222,055.98
Miscellaneous:		
Legislative	5,793,797.72	
Executive	283,800.00	
Treasury Department	27,411,258.00	
War Department	6,236,371.00	
Department of Interior	6,898,949.00	
Department of Commerce and Labor	10,440,154.62	
Department of Justice	8,327,947.00	
District of Columbia	12,874,297.60	
Smithsonian Institution and National Museum	843,500.00	
Interstate Commerce Commission	1,710,000.00	
General supply committee	35,470.00	
		80,855,544.94

Permanent annual appropriations:		
Interest on the public debt	$22,860,000.00	
Refunds—customs, internal revenue, etc	20,780,300.00	
Miscellaneous, exclusive of sinking fund	23,200,364.12	
		$66,840,664.12
Total estimated appropriations, exclusive of Panama Canal, and postal service payable from the postal revenues		732,556,023.03
The Panama Canal appropriations subject to reimbursement by proceeds of bond sales are estimated at		30,174,432.11
Total estimated appropriations for 1914, exclusive of sinking fund and postal service		762,730,455.14
Excess of estimated expenditures over ordinary receipts of		22,556,023.03
Excess of estimated expenditures, including the Panama Canal appropriations, of		52,730,455.14

POSTAL SERVICE.

The expenditures for the Postal Service for the year 1914 will approximate $282,000,000, and under normal conditions of business the postal revenues are expected to equal this sum.

Comparison of the estimates for 1914, with the appropriations for 1913, shows an increase in the 1914 estimates of $80,947,439.93, as exhibited in the tables following:

Statement of estimates of appropriations for 1914, increased over appropriations for 1913.

[Excluding sinking fund and postal service payable from the postal revenues.]

Departments, etc.	1914 estimates, including permanent annual.	1913 appropriations, including permanent annual.	Increase in 1914 estimates over 1913 appropriations.	Decrease in 1914 estimates under 1913 appropriations.
Legislative	$13,291,983.22	$12,447,488.84	$844,494.38	
Executive	820,790.00	600,063.89	220,726.11	
Department of State	4,492,012.61	4,188,430.39	303,582.22	
Treasury Department:				
Treasury Department, exclusive of public buildings	49,621,170.00	47,875,717.51	1,745,452.49	
Public buildings	8,832,700.00	10,369,917.92		$1,537,217.92
New revenue cutters	375,000.00	350,000.00	25,000.00	
War Department:				
War Department, exclusive of rivers and harbors	124,313,278.80	115,750,876.81	8,562,401.99	
Rivers and harbors	56,766,992.00	42,755,620.50	14,011,371.50	
Navy Department:				
Navy Department, exclusive of building program	113,134,907.53	105,526,101.73	7,608,805.80	
Navy building program, new	18,882,579.00			
Navy building program, prior years	22,284,091.00	20,569,373.48	20,597,296.52	
Department of the Interior:				
Department of the Interior, exclusive of pensions	41,403,164.53	37,104,452.52	4,298,712.01	
Pensions	185,220,000.00	165,146,145.84	20,073,854.16	
Post Office Department, exclusive of postal service	2,014,510.00	2,776,222.51		761,712.51
Department of Agriculture	23,976,430.00	22,894,590.25	1,081,839.75	
Department of Commerce and Labor	16,873,264.62	14,875,475.61	1,997,789.01	
Department of Justice	10,798,337.00	9,845,268.79	953,068.21	
Territorial governments	128,750.00	183,150.00		54,400.00
Independent offices	2,836,165.12	2,619,015.12	217,150.00	
District of Columbia	13,629,897.60	11,338,633.50	2,291,264.10	
Interest on the public debt	22,860,000.00	22,775,000.00	85,000.00	
Ordinary	732,556,023.03	649,991,545.21	84,917,808.25	
Net increase in ordinary			82,564,477.82	2,353,330.43
Panama Canal	30,174,432.11	31,791,470.00		1,617,037.89
Total	762,730,455.14	681,783,015.21	84,917,808.25	
Total net increase			80,947,439.93	3,970,368.32

Exhibit of appropriations for 1913.

Total appropriations for 1913, including estimated permanent annual appropriations and appropriations for the postal service payable from the postal revenues		$1,012,137,614.21
Deficiency appropriations made for prior years		9,212,376.42
		1,021,349,990.63
Deduct—		
Appropriations made for the postal service for 1913 which are payable from postal revenues	$269,704,599.00	
Deficiency appropriations made for prior years	8,155,587.25	
Postal deficiencies payable from the postal revenues	1,056,789.17	
Sinking fund	60,650,000.00	
		339,566,975.42
Total		681,783,015.21

Agreeing with the appropriations for 1913 shown in the preceding table, against which the estimates of appropriations submitted for 1914 show an increase of $80,947,439.93.

I respectfully call your attention to the two further divisions of this report, to wit, the condensed annual reports of the various bureaus and divisions of the Treasury Department and the tables accompanying the report on the finances.

FRANKLIN MACVEAGH,
Secretary.

To the SPEAKER OF THE HOUSE OF REPRESENTATIVES.

REPORT OF THE TREASURER OF THE UNITED STATES.

TREASURY DEPARTMENT,
OFFICE OF THE TREASURER,
Washington, September 30, 1912.

SIR: The transactions of the Treasury of the United States for the fiscal year ended June 30, 1912, and its condition at the close of the year are presented in the following report.

The ordinary receipts and disbursements, classified for the past two years, are compared in the table following:

Ordinary receipts and disbursements for the fiscal years 1911 and 1912.

Account.	1911	1912	Increase.	Decrease.
RECEIPTS.				
Customs	$314,497,071.24	$311,321,672.22		$3,175,399.02
Internal revenue:				
Ordinary	289,012,224.20	293,028,895.93	$4,016,671.73	
Corporation tax	33,516,976.59	28,583,303.73		4,933,672.86
Lands	5,731,636.88	5,392,796.75		338,840.13
Miscellaneous	50,828,626.75	45,092,313.79		5,736,312.96
Receipts of the District of Columbia	7,626,006.77	8,483,685.46	857,678.69	
Total	701,212,542.43	691,902,667.88	4,874,350.42	14,184,224.97
Deduct moneys covered by warrant in year subsequent to the deposit thereof	301,960.00	461,792.56	159,832.56	
	700,910,582.43	691,440,875.32	4,714,517.86	14,184,224.97

Ordinary receipts and disbursements for the fiscal years 1911 and 1912—Continued.

Amount.	1911	1912	Increase.	Decrease.
RECEIPTS—continued.				
Add moneys received in fiscal year but not covered by warrant	$461,792.56	$337,590.05		$124,202.51
Net available	701,372,374.99	691,778,465.37		9,593,909.62
DISBURSEMENTS.				
Legislative	13,344,838.28	12,729,949.61		614,888.67
Executive	734,602.93	923,978.57	$189,375.64	
State Department	4,902,175.29	4,676,384.03		225,791.26
Treasury Department	66,407,481.63	65,942,023.34		465,458.29
War Department, civil	2,221,124.60	2,253,473.75	32,349.15	
Navy Department, civil	791,141.80	797,704.03	6,562.23	
Interior, civil	23,054,316.00	24,036,297.82	981,981.82	
Post Office Department proper	1,946,378.28	1,893,037.00		53,341.28
Postal deficiencies	[1] 133,784.29	1,568,194.88	1,701,979.17	
Department of Agriculture	17,666,228.26	19,471,567.42	1,805,339.16	
Department of Commerce and Labor	18,503,442.87	14,466,998.31		4,036,444.56
Department of Justice	9,508,740.11	9,716,999.76	208,259.65	
Independent offices	2,555,973.64	2,388,838.31		167,135.33
District of Columbia	12,335,939.64	12,959,542.46	623,602.82	
Total civil and miscellaneous	173,838,599.04	173,824,989.29	5,549,449.64	5,563,059.39
Military Establishment, including rivers and harbors	160,135,975.89	148,795,421.92		11,340,553.97
Naval Establishment	119,937,644.39	135,591,955.72	15,654,311.33	
Indian Service	20,933,869.44	20,134,839.80		799,029.64
Pensions	157,980,575.01	153,590,456.26		4,390,118.75
Interest on public debt	21,311,334.12	22,616,300.48	1,304,966.36	
Total ordinary disbursements	654,137,997.89	654,553,963.47	22,508,727.33	22,092,761.75
Net			415,965.58	
Surplus	47,234,377.10	37,224,501.90		

[1] Excess of repayments.

From the foregoing comparison it will be observed that on the side of the receipts for 1912 customs show a decrease of $3,175,399.02, corporation tax of $4,933,672.86, sales of public lands of $338,840.13, and the receipts from miscellaneous sources are less by $5,736,312.96, while increased receipts appear in internal revenue (ordinary) of $4,016,671.73 and from the District of Columbia of $857,678.69. The net decrease from all sources was $9,593,909.62. In expenditures there was a decrease in the total charges for civil and miscellaneous of $13,609.75, for the War Department of $11,340,553.97, for Indians of $799,029.64, and for pensions of $4,390,118.75. The Navy Department cost $15,654,311.33 more than in 1911, and for interest on the public debt $1,304,966.36 more was spent. The result on all accounts of disbursements was a net increase of $415,965.58. The surplus for 1912 was $37,224,501.90, as against $47,234,377.10 in the preceding year.

THE PANAMA CANAL.

The balance of the proceeds of the sale of Panama Canal bonds, under the terms offered by the Secretary of the Treasury on May 16, 1911, amounting to $33,189,104.15, was paid into the Treasury by the successful bidders during July, 1911, which amount proved sufficient to meet the expenditures on account of the canal until the latter part of June, 1912.

The general conditions that prevailed in the governmental finances during the fiscal year favored the maintenance of an adequate working balance in the Treasury, and under such circumstances it was

not deemed advisable by the Secretary of the Treasury to offer for sale additional bonds of the Panama Canal loan.

The total net balance expended out of the general fund of the Treasury to June 30, 1912, reimbursable from the proceeds of bonds not yet sold, is $137,886,359.04.

In the following statement the proceeds of sales of bonds and the disbursements on account of the canal to the close of the fiscal year 1912 are set forth by years:

Receipts and disbursements on account of the Panama Canal.

Fiscal years.	Proceeds of United States bonds sold.	Disbursements for Panama Canal.	Excess of—	
			Receipts.	Disbursements.
1904		$50,174,485.00		$50,174,485.00
1905		3,918,819.83		3,918,819.83
1906		19,379,373.71		19,379,373.71
1907	$31,210,817.95	27,198,618.71	$4,012,199.24	
1908	25,367,768.67	38,093,929.04		12,726,160.37
1909	30,731,008.21	31,419,442.41		688,434.20
1910		33,911,673.37		33,911,673.37
1911	18,102,170.04	37,063,515.33		18,961,345.29
	105,411,764.87	241,159,857.40	4,012,199.24	139,760,291.77
1912	33,189,104.15	35,327,370.66		2,138,266.51
Total	138,600,869.02	276,487,228.06	4,012,199.24	141,898,558.28
Net				137,886,359.04

RECEIPTS AND DISBURSEMENTS ON ACCOUNT OF THE POST OFFICE DEPARTMENT.

The Postmaster General has exclusive control of the receipts and disbursements on account of the Post Office Department. A statement of the transactions relative thereto at the Treasury offices during the fiscal year 1912 will be found on page 178 of this report. Advances were made from the Treasury to meet deficiencies in the postal revenues of $3,568,194.88 during the year, of which $2,000,000 was repaid before the close of the year.

TRANSACTIONS IN THE PUBLIC DEBT.

Postal savings bonds, a new class of interest-bearing obligations authorized by the act of June 25, 1910, were first issued in July, 1911, to the amount of $41,900, followed by an additional issue in January, 1912, of $417,380, making a total of $459,280 during the fiscal year. The deposits of lawful money of the United States, under the act of July 14, 1890, to retire national-bank notes were $20,078,365, which, with the deposits for the postal savings bonds, makes a total of $20,537,645 in actual cash received on account of the public debt, while the cash disbursements on account of principal of matured loans and fractional currency were $120,616.03 and for national-bank notes canceled and retired $28,527,711.50, a total disbursement for the public debt of $28,648,327.53. The net result was an excess of disbursements of $8,110,682.53.

The cash received from sales of bonds of the Panama Canal loan is taken up in the account with the Panama Canal, as may be seen on page 138 of this report. Other transactions relate to the paper currency issued under the direct authority of the Government.

Comparison, by items, for the fiscal years 1911 and 1912 is made in the annexed table:

Receipts and disbursements on account of the public debt for 1911 and 1912.

Account.	1911	1912	Increase.	Decrease.
RECEIPTS.				
Lawful money deposited to retire national-bank notes	$40,232,555.00	$20,078,365.00		$20,154,190.00
Notes and certificates issued:				
United States notes	146,860,000.00	149,660,000.00	$2,800,000.00	
Gold certificates	408,900,000.00	355,760,000.00		53,140,000.00
Silver certificates	357,780,000.00	411,432,000.00	53,652,000.00	
Total	913,540,000.00	916,852,000.00	56,452,000.00	53,140,000.00
Panama Canal loan:				
Proceeds of bonds sold—				
Principal	17,641,634.00	32,358,366.00	14,716,732.00	
Premium	460,536.04	830,738.15	370,202.11	
Postal savings bonds		459,280.00	459,280.00	
Total	18,102,170.04	33,648,384.15	15,546,214.11	
Aggregate	971,874,725.04	970,578,749.15		1,295,975.89
DISBURSEMENTS.				
United States bonds retired	245,065.00	119,380.00		125,685.00
Fractional currency retired	1,431.35	1,236.03		195.32
National-bank notes retired	34,976,840.00	28,527,711.50		6,449,128.50
Total	35,223,336.35	28,648,327.53		6,575,008.82
Notes and certificates redeemed:				
United States notes	146,860,000.00	149,660,000.00	2,800,000.00	
Treasury notes	426,000.00	317,000.00		109,000.00
Gold certificates	276,966,200.00	310,573,300.00	33,607,100.00	
Silver certificates	383,398,000.00	393,382,000.00	9,984,000.00	
Total	807,650,200.00	853,932,300.00	46,391,100.00	109,000.00
Aggregate	842,873,536.35	882,580,627.53	39,707,091.18	
Excess of receipts	129,001,188.69	87,998,121.62		

It will be observed in the study of the foregoing table that the United States notes issued are offset by an equal amount of worn or unfit notes in kind canceled and retired, which is in accordance with the provisions of the act of May 31, 1878. In explanation of the manner of issuing and redeeming gold certificates, silver certificates, and Treasury notes of 1890, it may be said that for certificates issued an equal amount of the respective kinds of money held in the general fund is transferred to, and retained in, the trust funds for their redemption; for Treasury notes canceled and retired a like amount of standard silver dollars is released from the trust funds and brought into the general fund in their stead.

PUBLIC DEBT, 1911 AND 1912.

The outstanding principal of the interest-bearing debt at the close of the fiscal year 1912 was $963,776,770, an increase of $48,423,580 as compared with that of 1911. The items increased were: Panama Canal loan, $47,964,300 (the balance of $50,000,000 sold by the Secretary of the Treasury under offer of May 16, 1911); postal savings bonds, $459,280.

The debt bearing no interest amounted to $380,061,735.16, a decrease of $8,569,962.53.

The certificates and notes issued on deposits of coin and bullion (trust funds, act of Mar. 14, 1900) took on a growth of $62,919,700, and amounted to $1,524,535,369 at the close of the year June 30, 1912.

Comparison of the public debt is made, by items, for the fiscal years 1911 and 1912 in the statement following:

Public debt, 1911 and 1912.

	Rate.	When payable.	Outstanding June 30, 1911.	Outstanding June 30, 1912.
Interest-bearing debt:	*P. ct.*			
Consols of 1930	2	After Apr. 1, 1930	$646,250,150.00	$646,250,150.00
Loan of 1908–1918	3	After Aug. 1, 1908	63,945,460.00	63,945,460.00
Loan of 1925	4	Feb. 1, 1925	118,489,900.00	118,489,900.00
Panama Canal loan	2	Aug. 1, 1916	84,631,980.00	84,631,980.00
Do	3	June 1, 1961	2,035,700.00	50,000,000.00
Postal Savings bonds—				
1911–1931 (first series)	2½	July 1, 1931		41,900.00
1912–1932 (second series)	2½	Jan. 1, 1932		417,380.00
Total interest-bearing debt			915,353,190.00	963,776,770.00
Debt bearing no interest:				
Matured loans		On demand	1,879,830.26	1,760,450.26
Old demand notes		do	53,282.50	53,282.50
United States notes		do	346,681,016.00	346,681,016.00
National-bank notes		do	33,160,178.00	24,710,831.50
Fractional currency		do	6,857,390.93	6,856,154.90
Total			388,631,697.69	380,061,735.16
Certificates and notes issued on deposits of coin and bullion (trust funds, act Mar. 14, 1900):				
Gold certificates		On demand	994,870,669.00	1,040,057,369.00
Silver certificates		do	463,499,000.00	481,549,000.00
Treasury notes of 1890		do	3,246,000.00	2,929,000.00
Total			1,461,615,669.00	1,524,535,369.00
Aggregate			2,765,600,556.69	2,868,373,874.16

PAYMENT OF INTEREST ON REGISTERED BONDS OF THE UNITED STATES.

Previous to June 1, 1912, interest on registered bonds of the United States was paid by checks prepared and mailed by the Treasurer of the United States, from records certified in the office of the Secretary of the Treasury. For such interest due June 1, 1912, and thereafter, checks have been prepared and mailed from the office of the Secretary of the Treasury. Such checks bear a certificate as to the principal of bonds registered in the name of the payee, over the facsimile signature of the Chief of the Division of Loans and Currency; they also bear the facsimile signature of the Secretary and are countersigned by a clerk in his office. These checks, like coupons, are paid by the Treasurer and the Assistant Treasurers of the United States, and the amount so disbursed is included in the requisition for reimbursement made by the Treasurer at the end of the month, as heretofore. The paid checks are sent to the Register of the Treasury for an administrative examination, who in turn forwards them to the Auditor for the Treasury Department.

RESERVE AND TRUST FUNDS.

The transactions in the reserve fund, while in excess of those in the preceding year, represent more truly exchanges to secure an accommodation of denominations. There was no apparent disposition on the part of the holders of United States notes to use them in with-

drawing gold coin from the Treasury. The redemptions from the reserve fund during the past fiscal year were, in United States notes, $45,490,350, and in Treasury notes, $7,955, making a total of $45,498,305. Under the provisions of the act of March 14, 1900, the redeemed notes were exchanged for gold coin each day, and thereby the reserve was maintained at the fixed amount of $150,000,000.

The trust funds at the close of the fiscal year 1912 amounted to $1,524,535,369, of which $887,117,950 was in gold coin, $152,939,419 in gold bullion, and $484,478,000 in standard silver dollars.

Under the provisions of the act of March 2, 1911, gold certificates are issued for deposits of foreign gold coin at their bullion value and of gold bullion bearing the stamp of the coinage mints of the United States, or the assay office in New York.

There was an increase during the year of $45,186,700 in the gold held against the outstanding gold certificates, and of $17,733,000 in the silver dollars held against outstanding Treasury notes of 1890 and silver certificates.

The transactions in trust-fund obligations during the fiscal year 1912 are recorded here:

	Outstanding June 30, 1911.	Fiscal year 1912.		Outstanding June 30, 1912.
		Issued.	Redeemed.	
Gold certificates	$994,870,669	$355,760,000	$310,573,300	$1,040,057,369
Silver certificates	463,499,000	411,432,000	393,382,000	481,549,000
Treasury notes	3,246,000		317,000	2,929,000
Total	1,461,615,669	767,192,000	704,272,300	1,524,535,369

STATEMENT OF THE TREASURY OF THE UNITED STATES.

The holdings of moneys in the Treasury at the close of the fiscal year 1912 from the revised figures of the several funds were:

Reserve fund.

Gold coin and bullion	$150,000,000

Trust funds.

[Held for the redemption of the notes and certificates for which they are, respectively, pledged.]

Gold:		Gold certificates outstanding	$1,040,057,369
Coin $887,117,950		Silver certificates outstanding	481,549,000
Bullion 152,939,419		Treasury notes outstanding	2,929,000
	$1,040,057,369		
Silver dollars	481,549,000		
Silver dollars of 1890	2,929,000		
Total	1,524,535,369	Total	1,524,535,369

GENERAL FUND—CASH IN THE VAULTS.

After setting out from the assets of the Treasury the appropriate kinds of money to meet the requirements of the reserve and trust funds, the balances of each kind of money held belong to the general fund of the Treasury, from which, however, must be deducted the current liabilities.

The items composing the general fund are subdivided; the first part shows the amount of each kind of available cash actually held in the vaults of the Treasury offices, the demands against the same, and the working balance in such offices; the second part shows the

amounts of public moneys in national banks and other depositaries to the credit of the Treasurer of the United States and of disbursing officers, the demands against the same, and the net balance in such depositaries subject to draft; the third part shows the cash items held in Treasury offices, but which, under provisions of law, are of limited tender or unavailable for payment.

The assets in the general fund in the Treasury on June 30, 1912, and the demand liabilities outstanding on that date were as follows:

In Treasury offices:			
Gold coin		$17,406,895.22	
Gold certificates		96,621,751.00	
Standard silver dollars		13,460,446.00	
Silver certificates		12,324,600.00	
United States notes		8,983,695.00	
Treasury notes of 1890		13,430.00	
National-bank notes		15,643,298.65	
Certified checks on banks		723,316.13	
			$165,177,432.00
Deduct current liabilities:			
National-bank 5 per cent fund	$24,349,434.05		
Less notes in process of redemption	24,349,434.05	.....	
Outstanding warrants and checks		7,861,635.30	
Balances to credit of disbursing officers		48,052,899.71	
Post Office Department balance		1,791,544.55	
Miscellaneous items		8,728,927.04	
			66,435,006.60
Working balance in Treasury offices			$98,742,425.40
In national-bank depositaries:			
To credit of the Treasurer of the United States		$37,953,488.51	
To credit of mints and assay offices		172,101.12	
To credit of disbursing officers		10,380,596.14	
			$48,506,185.77
In treasury of Philippine Islands:			
To credit of the Treasurer of the United States		1,084,570.75	
To credit of United States disbursing officers		3,459,626.11	
			4,544,196.86
			53,050,382.63
Deduct current liabilities:			
Outstanding warrants		847,821.54	
Balance to credit of disbursing officers		13,840,222.25	
			14,688,043.79
Balance in banks and in treasury of Philippine Islands			38,362,338.84
In Treasury offices:			
Silver bullion (at cost)			$2,071,857.69
Subsidiary silver coin			25,554,006.86
Fractional currency			301.68
Minor coin			2,386,924.87
Awaiting reimbursement, interest on public debt paid			34,623.65
			30,047,714.75
Total balance in general fund June 30, 1912			167,152,478.99
Total balance in general fund June 30, 1911			140,176,926.13
Net increase			26,975,552.86

AVAILABLE CASH BALANCE.

There was a net increase of $26,975,552.86 in the available cash in the general fund at the close of the fiscal year 1912 as compared with that of 12 months earlier. This increase is verified by the following transactions, which include the net results in all accounts of receipts and disbursements shown on previous pages of this report:

Available cash balance June 30, 1911		$140,176,926.13
Add excess of ordinary receipts over disbursements for 1912 (see p. 137)	$37,224,501.90	
Deduct:		
Excess of Panama Canal disbursements over receipts (see p. 138)	$2,138,266.51	
Excess of public debt disbursements over receipts (see p. 139)	8,110,682.53	
	10,248,949.04	
		26,975,552.86
Available cash balance June 30, 1912		167,152,478.99

The working balance in the vaults of the Treasury at the close of the year was $98,742,425.40.

Financial conditions are good, and money continues abundant at reasonable rates of interest. Bank loans are large, it is true, showing a considerable increase compared with a year ago, but the reserves as a whole while not as large as they were 12 months earlier, are still sufficiently above the legal requirements to indicate a fundamentally sound banking position. And then it is to be remembered that the cash in the Treasury vaults is an additional reserve back of the credits of the country.

If an emergency should arise calling for an increase of Government deposits in banks, the Secretary of the Treasury is in position to give prompt and effective relief to the business situation.

The balance in the Treasury at the end of each month from January, 1906, is stated in Table No. 19, page 203, and for July 1 in each year since 1906 in the statement following:

Available cash balance (including the reserve fund) on the dates named.

Dates.	Available cash balance.		
	Reserve fund.	General fund.	Total.
July 1, 1906	$150,000,000	$180,689,354.82	$330,689,354.82
July 1, 1907	150,000,000	272,061,445.47	422,061,445.47
July 1, 1908	150,000,000	245,171,347.73	395,171,347.73
July 1, 1909	150,000,000	126,375,428.10	276,375,428.10
July 1, 1910	150,000,000	106,894,675.67	256,894,675.67
July 1, 1911	150,000,000	140,176,926.13	290,176,926.13
July 1, 1912	150,000,000	167,152,478.99	317,152,478.99

GOLD IN THE TREASURY.

At the close of the fiscal year 1912 the gold in the Treasury amounted to $1,207,464,264.22, of which $1,004,524,844.66 was in coin. Provision has been made, by the act of March 2, 1911, for the issue of gold certificates against gold bullion and foreign coin deposited in the Treasury. These certificates differ in no particular from those issued against United States gold coin and are payable in such coin. The intent and effect of the act is not to limit the free

coinage of gold; the mints continue to receive all the gold that is offered, and it all enters into circulation either in coin or in gold certificates. The effect is simply to allow the Treasury to carry a portion of the reserves in bullion, thus saving cost of coinage.

There has been for a number of years past a growing demand for new gold coins of current coinage, and this demand is due principally to the popularity of these coins for Christmas gifts, Easter offerings, birthday presents, and like purposes. The amount shipped to depositors therefor at the expense of the consignee for transportation charges during the fiscal year was $9,363,660.

The total amount of gold in the Treasury on July 1 in each year from 1906, set apart for the respective uses, is recorded in the annexed statement:

Gold in the Treasury.

Dates.	Reserve.	For certificates in circulation.	General fund (belonging to Treasury).	Total.
July 1, 1906	$150,000,000	$516,561,849	$140,489,841.30	$807,051,690.30
July 1, 1907	150,000,000	600,072,299	154,619,431.14	904,691,730.14
July 1, 1908	150,000,000	782,976,619	71,912,063.18	1,004,888,682.18
July 1, 1909	150,000,000	815,005,449	77,698,852.02	1,042,704,301.02
July 1, 1910	150,000,000	802,754,199	92,411,286.24	1,045,165,485.24
July 1, 1911	150,000,000	930,367,929	83,533,254.56	1,163,901,183.56
July 1, 1912	150,000,000	943,435,618	114,028,646.22	1,207,464,264.22

The export movement of gold during the year caused net withdrawals of $8,391,848, and notwithstanding this drain there was a net growth of $43,563,080.66 in the amount held in the Treasury. This steady flow of gold into the Treasury continues to interest the students of finance at home as well as abroad and to excite an absorbing study of the resources of a country so favored in the distribution of the precious metal.

BONDS HELD AS SECURITY FOR NATIONAL BANKS.

United States bonds held by the Treasurer as security for the circulating notes of national banks at the close of the fiscal year 1912 amounted to $724,493,740, an increase of $25,961,680 as compared with that of 12 months earlier, while the securities pledged for public deposits in the depositary banks amounted to $48,309,500, a decrease of $1,897,300.

The kinds of bonds in the custody of the Treasurer of the United States and the changes therein during the fiscal year 1912 are recorded in the subjoined table:

Bonds held for national banks, close of June, 1911 and 1912, and changes during 1912.

Kinds of bonds.	Rate.	Held June 30, 1911.	Transactions during 1912.		Held June 30, 1912.
			Deposited.	Withdrawn.	
TO SECURE CIRCULATION.	P. ct.				
United States loan of 1925	4	$21,950,800	$4,891,200	$3,052,000	$23,790,000
United States loan of 1908-1918	3	15,720,240	5,873,440	2,249,060	19,344,620
United States consols of 1930	2	582,306,000	44,044,650	26,102,350	600,248,300
United States Panama Canal, 1916	2	51,154,040	2,738,600	1,494,800	52,397,840
United States Panama Canal, 1918	2	27,400,980	3,930,500	2,618,500	28,712,980
Total	.....	698,532,060	61,478,390	35,516,710	724,493,740

Bonds held for national banks, close of June, 1911 and 1912, and changes during 1912—Continued.

Kinds of bonds.	Rate.	Held June 30, 1911.	Transactions during 1912.		Held June 30, 1912.
			Deposited.	Withdrawn.	
TO SECURE PUBLIC DEPOSITS.					
	P. ct.				
United States loan of 1925	4	$4,311,000	$776,000	$1,371,000	$3,716,000
United States loan of 1908–1918	3	4,904,300	826,000	1,997,000	3,733,300
United States Panama Canal, 1961	3	.....	17,441,000	1,223,000	16,218,000
United States consols of 1920	2	24,906,900	1,267,000	13,527,200	12,646,700
United States Panama Canal, 1916	2	2,768,000	.....	1,221,500	1,546,500
United States Panama Canal, 1918	2	1,510,000	50,000	848,000	712,000
Philippine loans	4	4,717,000	345,000	520,000	4,542,000
Porto Rico loans	4	934,000	15,000	205,000	744,000
District of Columbia	3.65	872,000	.....	25,000	847,000
Territory of Hawaii	(1)	676,000	22,000	13,000	685,000
Philippine Railway	4	146,000	106,000	10,000	242,000
State, city, and railroad	(1)	4,461,600	2,570,000	4,354,600	2,677,000
Total	.....	50,206,800	23,418,000	25,315,300	48,309,500

[1] Various.

BONDS HELD AS SECURITY FOR POSTAL SAVINGS FUNDS.

The Treasurer of the United States held in trust, under the provisions of the act of June 25, 1910, as security for postal savings funds deposited in designated depositaries at the close of the fiscal year 1912, bonds and securities amounting to $50,232,371.26.

At the periods named the securities held are stated in the annexed table, and the changes during the year cited.

Bonds held to secure postal savings funds, close of June, 1911 and 1912, and changes during 1912.

Kind of bonds.	Rate.	Held June 30, 1911.	Transactions during 1912.		Held June 30, 1912.
			Deposited.	Withdrawn.	
	P. ct.				
United States loan of 1925	4	$25,000.00	$478,900.00	$7,000.00	$496,900.00
United States loan of 1908–1918	3	86,500.00	525,560.00	64,000.00	548,060.00
United States Panama, 1961	3	.....	4,626,500.00	608,000.00	4,018,500.00
United States consols of 1930	2	154,000.00	1,002,300.00	326,000.00	830,300.00
United States Panama, 1916–1936	2	15,000.00	97,000.00	22,000.00	90,000.00
United States Panama, 1918–1938	2	5,000.00	41,000.00	6,000.00	40,000.00
Philippine loans	4	304,000.00	1,110,000.00	81,000.00	1,333,000.00
Porto Rico loans	4	618,000.00	1,058,000.00	248,000.00	1,428,000.00
District of Columbia	3.65	10,000.00	276,000.00	20,000.00	266,000.00
Territory of Hawaii	(1)	59,000.00	1,076,000.00	135,000.00	1,000,000.00
State loans	(1)	247,000.00	5,965,400.00	528,500.00	5,683,900.00
City loans	(1)	1,782,251.04	24,479,187.50	2,586,960.60	23,674,477.94
County loans	(1)	351,000.00	5,562,485.00	648,585.00	5,264,900.00
Miscellaneous loans	(1)	483,500.00	5,429,707.32	354,874.00	5,558,333.32
Total	.....	4,140,251.04	51,728,039.82	5,635,919.60	50,232,371.26

[1] Various.

The following-described securities, at the rates respectively designated, will be accepted by the board of trustees as security for the safety and prompt payment on demand of postal savings funds, viz:

(*a*) Interest-bearing bonds of the United States, bonds issued by the Government of the Philippine Islands, and bonds of the District of Columbia and the Government of Porto Rico will be received at their par value.

(*b*) Bonds of any State of the United States and bonds of the Territory of Hawaii will be received at 90 per cent of their market value, such market value not to be considered as exceeding par.

(c) Bonds of any city, town, county, or other legally constituted municipality or district in the United States which has been in existence for a period of 10 years and which for a period of 10 years previous has not defaulted in the payment of any part of either principal or interest of any funded debt authorized to be contracted by it, and whose net funded indebtedness does not exceed 10 per cent of the valuation of its taxable property, to be ascertained by the last preceding valuation for the assessment, of taxes, will be received at 75 per cent of their market value, such market value not to be considered as exceeding par.

No deposit of bonds for less than $1,000 will be accepted, nor will fractions of a thousand be received. The right is reserved to reclassify the securities acceptable for deposits or to change the valuation at which they will be received. Under no circumstances will securities other than those above set forth be acceptable.

POSTAL SAVINGS BONDS AND INVESTMENTS THEREIN.

The trustees of the Postal Savings System, when confronted with a quotation for postal savings bonds in the open market of 92½ cents on the dollar, took the matter in hand, and under a general authority conferred upon them in the postal savings law, have arranged to take over at par any of these bonds that depositors may wish to turn back.

Under the arrangement mentioned in the foregoing the Treasurer of the United States held on June 30, 1912, $5,460 in postal savings bonds, representing investments made by the board of trustees, Postal Savings System. The first deposit of these bonds was received on December 9, 1911, and all of such bonds held by the Treasurer are registered in the name of the board of trustees.

WITHDRAWAL OF BONDS TO SECURE CIRCULATION.

Attention is invited to the fact that, while the volume of outstanding national-bank notes attained a maximum at $745,720,348 during the last fiscal year, there was no marked effort on the part of the banks at any time during the year to retard the growth of this circulation by making deposits of lawful money of the United States to the full limit granted under provisions of law for the retirement of such circulation. The act of March 4, 1907, limits such deposits to $9,000,000 per month, and this limit was not reached in any month, as may be seen in the monthly statement following:

Month.	Deposits of lawful money.	National-bank notes outstanding.	Month.	Deposits of lawful money.	National-bank notes outstanding.
July	$1,181,048	$732,824,016	February	$1,541,845	$744,272,273
August	743,795	737,206,748	March	4,258,640	744,871,283
September	852,750	737,788,358	April	2,233,197	745,720,348
October	1,535,397	739,165,313	May	1,322,150	745,492,672
November	1,696,450	739,764,346	June	1,687,750	745,134,992
December	766,398	740,603,187			
January	2,258,895	741,661,968	Total	20,078,365	

NATIONAL BANKS DESIGNATED AS DEPOSITARIES OF THE UNITED STATES.

The Secretary of the Treasury determines the number of such depositaries and the amount of public money required in each for the transaction of the public business, fixes the amount of balances they may hold, and requires the banks thus designated to give satisfactory

security, by the deposit of United States bonds and otherwise, for the safe-keeping and prompt payment of the public money deposited with them, and for the faithful performance of their duties as financial agents of the Government. The regular depositaries receive and disburse the public moneys, and are required to pay interest at the rate of 2 per cent per annum from and after July 1, 1912, on the average monthly amount of public deposits held in excess of the sum needed for the transaction of the public business, while the special depositaries hold only the moneys transferred to them from the Treasury. They pay interest at the same rate on the average monthly amount of public deposits held.

The number of national-bank depositaries at the close of the fiscal years 1911 and 1912 is given in the statement following:

	Regular.	Special.	Total.
Depositaries June 30, 1911	418	944	1,362
Depositaries June 30, 1912	424	929	1,353

At the close of the fiscal year 1912 there were 1,353 depositary banks and the total amount of public moneys held therein was $48,487,282.88, which was secured by bonds pledged therefor with the Treasurer of the United States.

The classification of depositaries by States and sections, the amount and per cent of the public deposits therein, and the amount of bonds pledged as security June 30, 1912, may be studied in the annexed table.

Classification of depositaries by States and sections, amount of public moneys therein, and amount of bonds on deposit June 30, 1912.

States, Territories, etc.	Number of depositaries.	Deposits in national banks.		Amount of bonds pledged to secure public deposits.
		To the credit of the Treasurer of the United States and United States disbursing officers.	Per cent.	
Maine	11	$282,738.24		$336,000
New Hampshire	18	254,450.12		284,000
Vermont	11	124,277.10		213,000
Massachusetts	50	1,142,477.90		978,000
Rhode Island	5	225,170.76		228,000
Connecticut	17	312,835.05		319,000
Total New England States	112	2,341,949.17	4.83	2,358,000
New York	94	4,270,989.94		3,482,000
New Jersey	20	662,352.92		669,000
Pennsylvania	139	2,262,688.54		2,035,000
Delaware	2	50,521.20		51,000
Maryland	37	1,069,174.53		724,500
District of Columbia	11	3,300,430.00		3,791,000
Total Eastern States	303	11,616,157.13	23.96	10,752,500
Virginia	43	1,535,461.25		1,541,000
West Virginia	19	413,084.38		466,000
North Carolina	21	526,208.47		542,000
South Carolina	10	210,708.79		212,000
Georgia	27	675,170.02		673,000
Florida	14	457,871.34		462,000
Alabama	18	302,845.11		321,000
Mississippi	9	57,924.66		71,000
Louisiana	12	278,988.18		305,000
Texas	52	1,781,957.10		1,835,500
Arkansas	6	104,456.30		105,000
Kentucky	43	1,848,621.31		1,889,600
Tennessee	16	734,216.10		736,000
Total Southern States	290	8,927,513.01	18.41	9,159,100

Classification of depositaries by States and sections, amount of public moneys therein, and amount of bonds on deposit June 30, 1912—Continued.

States, Territories, etc.	Number of depositaries.	Deposits in national banks. To the credit of the Treasurer of the United States and United States disbursing officers.	Per cent.	Amount of bonds pledged to secure public deposits.
Ohio	84	$2,170,043.95		$2,188,000
Indiana	62	1,529,490.29		1,622,000
Illinois	60	3,956,727.62		4,107,500
Michigan	31	939,424.90		1,019,000
Wisconsin	31	852,626.76		931,000
Minnesota	27	1,174,345.14		1,209,000
Iowa	62	654,098.19		685,000
Missouri	31	1,322,122.83		1,209,000
Total Middle Western States	388	12,598,879.68	25.98	12,970,500
North Dakota	7	254,202.90		267,000
South Dakota	15	525,888.06		547,000
Nebraska	32	1,123,078.10		1,125,000
Kansas	44	688,832.92		721,000
Montana	13	750,144.84		771,000
Wyoming	12	264,902.79		282,000
Colorado	18	1,412,268.92		1,441,000
New Mexico	8	299,990.60		302,000
Oklahoma	20	593,324.73		630,000
Total Western States	169	5,912,633.86	12.19	6,086,000
Washington	16	2,475,014.56		2,544,000
Oregon	16	1,338,172.28		1,359,000
California	31	1,194,305.29		1,126,000
Idaho	11	235,217.20		236,000
Utah	4	436,764.74		446,000
Nevada	3	52,000.00		52,000
Arizona	6	190,917.25		191,000
Alaska	2	297,629.55		300,000
Total Pacific States	89	6,220,020.87	12.83	6,254,000
Hawaii	1	669,826.14		529,400
Porto Rico	1	200,303.02		200,000
Total islands	2	870,129.16	1.80	729,400
Aggregate United States	1,353	48,487,282.88		48,309,500

PUBLIC DEPOSITS IN NATIONAL BANKS.

The balance in depositary banks to the credit of the general fund at the close of the fiscal year 1911 was $36,048,759.38, and to the credit of disbursing officers $11,598,905.22, making a total of $47,647,664.60.

The receipts from all sources during the earlier months of the fiscal year were sufficient to maintain the working balance in the Treasury offices at a figure somewhat above the amount actually required for the transaction of the public business; hence, there was no necessity for withdrawing the public deposits from national banks; and on the other hand there was no emergency calling for an increase of Government deposits in such banks. Therefore the balances in banks remained practically stationary during the period from July to the end of February, 1912.

The Secretary of the Treasury deemed it advisable to withdraw from two depositary banks in Boston, Mass., the special deposit of $1,500,000 in standard silver dollars placed therein during the month of June, 1909, for reasons set forth in the Finance Report for 1909, page 145. Accordingly, instructions were issued directing that the

amount should be delivered in installments of $100,000 each, beginning March 1, to the United States Express Co. for transportation to the mint of the United States at Philadelphia, Pa. The transfer was completed March 23, 1912.

At the end of March the balance in banks to the credit of the general fund was $33,836,839.48 and to the credit of disbursing officers $11,124,171.33.

On April 22, 1912, the Secretary of the Treasury gave notice to the depositary banks that the interest to be required on public deposits after July 1, 1912, would be at the rate of 2 per cent, payable, as heretofore, semiannually.

The provisions of law relating to the collection of taxes in the District of Columbia require that payments shall be made in the month of May, and that collections be deposited in the Treasury of the United States. To offset the drain upon the money in circulation in the District of Columbia due to these tax payments, the Secretary of the Treasury, on April 18, 1912, directed that the public deposits in the national banks of the District of Columbia be increased $3,000,000, the deposits to be made in three weekly installments beginning May 15, 1912, and to be divided among the several banks in proportion to the total deposits therein, and to be secured by bonds deposited with the Treasurer of the United States. Of the amount so placed, the depositary banks were required to return to the Treasury 20 per cent on or before July 15, 1912, 20 per cent on or before August 15, 1912, 10 per cent on or before September 14, 1912, and a like sum on or before the 14th of each succeeding month, making the final payment on or before February 14, 1913. The Department reserved the right to demand an earlier return of the money deposited if for any reason it should be deemed advisable. This deposit was made with the distinct understanding that either it shall be held in Washington, D. C., or it shall be deposited only in an institution where it may be counted as part of the lawful money reserve required to be held by national-bank associations. Interest at the rate of 2 per cent per annum is required on this deposit, under the act approved May 30, 1908, payable on July 1, 1912, and January 1, 1913.

At the end of April, 1912, the balance in banks to the credit of the general fund was $34,338,503.18, and to the credit of disbursing officers $10,500,924.27.

The increase of public deposits in national banks of the District of Columbia, as outlined in the foregoing, was noticeable in the aggregate deposits held by banks at the end of May, viz, balance to the credit of the general fund, $36,367,183.85, and to the credit of disbursing officers $11,158,216.26.

The income and outgo of public moneys through the depositary banks during the month of June, 1912, was much larger than in other months owing to the provisions of law relating to the payment of the corporation tax. On the last day of the fiscal year the collectors of internal revenue received payments of this tax until a late hour, and as a result the collections were deposited in banks, in many instances after banking hours, and transfers thereof to Treasury offices could not be effected until the succeeding business day.

At the close of the fiscal year on June 30, 1912, the balance in banks to the credit of the general fund was $37,953,488.51, and to the credit of disbursing officers $10,552,697.26, making a total of $48,506,185.77.

The depositary banks east of the Mississippi River continue to transfer to the subtreasury in New York, as recommended to the Secretary by the Treasurer in March, 1911, the deposits received in excess of the public moneys they are allowed to hold. This cooperation of the banks enables the Department, without cost, to centralize at that point a large part of the public moneys required for disbursement.

GENERAL ACCOUNT OF THE TREASURER OF THE UNITED STATES.

The Treasurer receives and keeps the moneys of the United States and disburses the same upon warrants drawn by the Secretary of the Treasury, countersigned by the Comptroller of the Treasury, and not otherwise. He takes receipts for all moneys paid by him and gives receipts for all moneys received by him; and all receipts for moneys received by him are indorsed upon warrants signed by the Secretary of the Treasury, without which warrant, so signed, no acknowledgment for money received into the Public Treasury is valid. He renders his accounts quarterly, or oftener if required, and at all times submits to the Secretary of the Treasury and the Comptroller of the Treasury, or either of them, the inspection of the moneys in his hands.

As a matter of information, it may be said, that all public moneys paid into any subtreasury office, national bank depositary, or other depository, are placed to the credit of the Treasurer of the United States and held subject to his draft. The public moneys in the hands of any depositary of public moneys may be transferred to the Treasury of the United States or may be transferred from one depositary to any other depositary, as the safety of the public moneys and the convenience of the public service shall require.

The public moneys in any subtreasury, mint, or other depositary are subject to special examination and count whenever it is deemed advisable by the Secretary of the Treasury. Such examinations of the moneys in the subtreasuries are frequently made by committees representing the Secretary and the Treasurer. Annual examinations of the public moneys in mints are made by committees selected by the Director of the Mint, but as these moneys are a part of the general account it is suggested that the Treasurer of the United States should have a representative on all such committees.

There are large accumulations of gold coin, gold bars, and standard silver dollars in some of the subtreasury offices and mints; and in making the examinations described in the foregoing, considerable expense is incurred for the employment of laborers to handle these funds. Then, there is also more or less risk of loss in the handling at each count or examination. In order to avoid such risk, and at the same time to diminish the expense attending the examination, it is recommended that the subject be taken under consideration for the purpose of devising some plan whereby a large part of such holdings may be set apart, when possible, in a vault or compartment where it can be locked, sealed, and safely kept, so that such contents may be accepted as a whole in subsequent examinations without handling the same. Of course, it is not expected that the moneys thus held will pass from the present bonded custodian to his successor without count.

MONETARY STOCK.

The stock of money continues to grow, showing an addition during the past fiscal year of $92,911,673. The part of this increase in gold was $64,991,695. The silver coins advanced in volume by $11,296,494, though this is partially offset by the cancellation of $317,000 in Treasury notes. National-bank notes furnished $16,940,484 of the total growth.

The aggregate monetary material, both metallic and paper, and the distribution of each component between the Treasury and the circulation at the close of June, 1911 and 1912, are exhibited in the subjoined statement:

Monetary stock.

[This statement represents the monetary stock of the United States, as shown by the revised statements for June 30, 1911, and 1912.]

Kinds.	In Treasury and mints.	In circulation.	Total stock.
JUNE 30, 1911.			
Gold coin and bullion	$1,163,901,184	$589,295,538	$1,753,196,722
Silver dollars	492,587,318	72,446,049	565,033,367
Subsidiary silver	21,185,641	138,421,723	159,607,364
Total metallic	1,677,674,143	800,163,310	2,477,837,453
United States notes	7,691,894	338,989,122	346,681,016
Treasury notes of 1890	8,744	3,237,256	3,246,000
National-bank notes	40,493,225	687,701,283	728,194,508
Total notes	48,193,863	1,029,927,661	1,078,121,524
Aggregate metallic and notes	1,725,868,006	1,830,090,971	3,555,958,977
Gold certificates	64,502,740	930,367,929	.....
Silver certificates	9,955,304	453,543,696	.....
Total certificates	74,458,044	1,383,911,625	.....
Aggregate	.....	3,214,002,596	3,555,958,977
JUNE 30, 1912.			
Gold coin and bullion	1,207,464,264	610,724,153	1,818,188,417
Silver dollars	495,009,446	70,339,574	565,349,020
Subsidiary silver	25,554,007	145,034,198	170,588,205
Total metallic	1,728,027,717	826,097,925	2,554,125,642
United States notes	8,983,695	337,697,321	346,681,016
Treasury notes of 1890	13,430	2,915,570	2,929,000
National-bank notes	39,992,733	705,142,259	745,134,992
Total notes	48,989,858	1,045,755,150	1,094,745,008
Aggregate metallic and notes	1,777,017,575	1,871,853,075	3,648,870,650
Gold certificates	96,621,751	943,435,618	.....
Silver certificates	12,324,600	469,224,400	.....
Total certificates	108,946,351	1,412,660,018	.....
Aggregate	.....	3,284,513,093	3,648,870,650

RATIO OF GOLD TO THE TOTAL STOCK OF MONEY.

There was a substantial growth in the share of gold in our general stock of money in the country during the past fiscal year, as may be seen in the subjoined statement.

Ratio of gold to total stock of money from July 1, 1906.

[From the revised statements of the Treasury Department.]

Dates.	Total stock of money.	Gold.	Per cent.
July 1, 1906	$3,069,976,591	$1,475,706,765	48.07
July 1, 1907	3,115,728,887	1,466,389,101	47.06
July 1, 1908	3,378,764,020	1,618,133,492	47.89
July 1, 1909	3,406,328,354	1,642,041,999	48.20
July 1, 1910	3,419,591,483	1,636,043,478	47.85
July 1, 1911	3,555,958,977	1,753,196,722	49.30
July 1, 1912	3,648,870,650	1,818,188,417	49.82

MONEY IN CIRCULATION.

A new record was made by the money in circulation, which attained a maximum at $3,305,763,336 on June 1, 1912, but owing to the large payments into the Treasury during the month of June, as in the preceding year, it became $3,284,513,093 at the close of the fiscal year. The gold coin and gold certificates increased $34,496,304, and advanced from 47.28 per cent of the total to 47.31 cent. The circulation per capita was $34.34.

Comparisons for years since 1906 are presented in the table following:

Money in circulation at the end of each fiscal year from 1906.

Fiscal years.	Money in circulation.					Circulation per capita.	Percentage of gold coin and certificates to total circulation.
	Gold coin and gold certificates.	United States notes and Treasury notes.	National-bank notes.	Silver coin and silver certificates.	Total.		
1906	$1,185,216,924	$343,277,540	$548,001,238	$660,150,926	$2,736,646,628	32.32	43.30
1907	1,161,769,670	348,245,590	589,242,125	673,699,070	2,772,956,455	32.22	41.90
1908	1,396,221,429	344,359,852	631,648,680	665,785,527	3,038,015,488	34.72	45.95
1909	1,414,343,147	344,321,682	665,538,806	682,037,022	3,106,240,657	34.93	45.53
1910	1,393,632,192	338,450,395	683,659,535	686,613,483	3,102,355,605	34.33	44.91
1911	1,519,663,467	342,226,378	687,701,283	664,411,468	3,214,002,596	34.20	47.28
1912	1,554,159,771	340,612,891	705,142,259	684,598,172	3,284,513,093	34.34	47.31

CIRCULATION AND POPULATION.

The extension of habitation into remote districts, multiplication of lines of traffic, and the development of the aggregate of industry and activity create a legitimate demand for an increased growth in the amount of money in circulation, but there is no method employed by which that demand, per capita, can be measured.

The statement following presents interesting data on the subject and may be studied to advantage:

Increase in population and in circulation per capita.

Fiscal years.	Money in circulation.	Population.	Circulation per capita.	Per cent of increase of population per year.	Per cent of increase of circulation per capita per year.
1906	$2,736,646,628	84,662,000	32.32	1.7	3.9
1907	2,772,956,455	86,074,000	32.22	1.7	[1].3
1908	3,038,015,488	87,496,000	34.72	1.6	7.8
1909	3,106,240,657	88,926,000	34.93	1.6	.6
1910	3,102,355,605	90,363,000	34.33	1.6	[1]1.7
1911	3,214,002,596	93,983,000	34.20	4.0	[1].3
1912	3,284,513,093	95,656,000	34.34	1.7	.4

[1] Decrease.

CONDITION OF THE UNITED STATES PAPER CURRENCY.

The Government issued directly 290,809,347 pieces of paper currency during the past fiscal year, while 273,426,336 pieces of worn and unfit paper money were redeemed and retired.

Under our financial system the privilege of supplying the paper currency is shared with the Government by the national banks, though not in equal proportion. The total paper money outstanding at the close of the last fiscal year amounted to $2,616,351,377, of which $745,134,992, or 28 per cent, was in national-bank notes limited to denominations of $5 and above to $100, while the issues of the Government are in denominations of $1 and upward to $10,000. The needs of business call for a large volume of the smaller denominations, that is to say, of $5 and under, but the banks are precluded from the issue of $1 and $2 notes, while the issue of $5 notes is limited to one-third in amount of the total circulation of the banks. Experience shows that a large number of the banks are reluctant to issue $5 notes. If the option of one-third in $5 bills had been taken by all national banks the normal supply of such bank bills on June 30, 1912, would have been $248,378,330 instead of the amount reported, viz, $141,565,470.

National-bank notes are not available for "reserves," and for this reason large amounts of such circulation are returned to the Treasury by the banks for redemption in order to replenish their "reserves." The expense of transportation to the Treasury in such cases is borne by the bank of issue, while the return of the proceeds is at the expense of the owner of the notes. The owners of Government paper currency sent to the Treasury for redemption have to pay the transportation charges both ways; and the payment of these charges under contract rates gives rise to a burden that does not bear equally upon the banks and other business interests in the different sections of the country, as for instance, the contract rates from Chicago, St. Louis, and Boston to Washington are 20 cents per $1,000, while such rates from Savannah, Charleston, Richmond, and other southern cities to Washington are 60 cents per $1,000.

As in previous annual reports, the Treasurer suggests that recommendation be made to Congress for legislation that will remove the limit on the weight of a package which may be sent through the registered mail of the United States, and that will authorize the transportation of moneys to and from the Treasury or between Treasury offices by registered mail, insured.

It is contemplated in the near future to use laundering machines, especially constructed for the purpose, for cleaning an appreciable percentage of United States paper money received for redemption and destruction and thus rendering it fit for further circulation. It appears from a series of tests made that the washing of money is feasible, and that the cost will not exceed one-tenth of a cent per note. Experience will demonstrate to just what extent the life of these laundered notes will be prolonged and their destruction deferred. It is believed that these machines can be operated to great advantage in the subtreasury offices, so that the expense involved in keeping the paper money issues of the Government clean will be greatly reduced.

UNITED STATES NOTES.

The provisions of the act of March 4, 1907, authorized changes to be made in denominations of paper currency issued directly by the Government, and under its operation the volume of United States notes fixed at $346,681,016, by the act of May 31, 1878, is being gradually converted into $5 notes. These changes have enlarged the resources of the Treasury for supplying the demand for small denominations of currency without increasing the total volume of said notes.

The transactions, by denominations, during the fiscal year 1912 are recorded in the table following:

Denominations.	Outstanding June 30, 1911.	Fiscal year 1912.		Outstanding June 30, 1912.
		Issued.	Redeemed.	
One dollar	$1,836,592		$5,597	$1,830,995
Two dollars	1,382,251		7,293	1,374,958
Five dollars	151,748,170	$107,180,000	89,878,240	169,049,930
Ten dollars	121,805,556	42,480,000	50,147,630	114,137,926
Twenty dollars	15,628,122		3,435,690	12,192,432
Fifty dollars	2,026,525		185,150	1,841,375
One hundred dollars	5,513,300		816,900	4,696,400
Five hundred dollars	5,200,500		730,500	4,470,000
One thousand dollars	42,530,000		4,453,000	38,077,000
Five thousand dollars				
Ten thousand dollars	10,000			10,000
Total	347,681,016	149,660,000	149,660,000	347,681,016
Unknown, destroyed	1,000,000			1,000,000
Net	346,681,016	149,660,000	149,660,000	346,681,016

TREASURY NOTES OF 1890.

Under the provisions of the act of March 14, 1900, the Treasury notes of 1890 are slowly disappearing. The total amount of these notes issued for the purchase of silver bullion to November 1, 1893 (the date of the repeal of the act), was $155,931,002. The amount redeemed during the last fiscal year was $317,000 and the amount outstanding at the close of the year was $2,929,000, against which standard silver dollars in equal amount are held in the trust funds for their redemption when presented.

The amount outstanding, by denominations, on June 30 for the past seven years is stated in Table No. 21, page 206.

GOLD CERTIFICATES.

The advance in the volume of gold certificates within 12 years by the sum of $812,260,190 is a measure of the greater strength of our circulation. The amount outstanding at the close of the last fiscal year was $1,040,057,369, an increase of $45,186,700 as compared with that of 12 months earlier. The denominations are limited to $10 and above. The gold certificates supply the large bills required in circulation, but there is need of a $5 gold certificate in order that the Treasury may make returns in that denomination when it is wanted in exchange for gold certificates presented for redemption. Also there is demand for gold certificates payable to order in denomination of $5,000. Such certificates are now issued in denominations of $10,000 only.

The gold certificates issued and redeemed, by denominations, during the fiscal year 1912 are stated in the annexed table:

Denominations.	Outstanding June 30, 1911.	Fiscal year 1912.		Outstanding June 30, 1912.
		Issued.	Redeemed.	
Ten dollars	$211,415,550	$108,080,000	$93,060,250	$226,435,300
Twenty dollars	248,914,464	83,360,000	75,777,500	256,496,964
Fifty dollars	52,092,455	17,000,000	14,039,400	55,053,055
One hundred dollars	77,757,700	20,400,000	18,030,150	80,127,550
Five hundred dollars	16,978,000	3,950,000	2,689,000	18,239,000
One thousand dollars	67,287,500	9,500,000	10,022,000	66,765,500
Five thousand dollars	95,795,000	6,000,000	6,775,000	95,020,000
Ten thousand dollars	224,630,000	107,470,000	90,180,000	241,920,000
Total	994,870,669	355,760,000	310,573,300	1,040,057,369

SILVER CERTIFICATES.

All of the $1, $2, and the greater part of the $5 denominations required in circulation are supplied by the issue of silver certificates. The volume of silver certificates outstanding at the close of the fiscal year 1912 was $481,549,000, of which $451,359,739 were in denominations of $5 and under; $20,757,611 in denominations of $10, and $9,431,650 in denominations of $20 and above. The large issue of small denominations during the crop moving and holiday seasons produces a slight redundancy of the smaller denominations in the months of January and February when the worn bills in large numbers are returned to the Treasury in exchange for higher denominations of currency.

The transactions in silver certificates, by denominations, during the fiscal year 1912 are recorded here:

Denominations.	Outstanding June 30, 1911.	Fiscal year 1912.		Outstanding June 30, 1912.
		Issued.	Redeemed.	
One dollar	$150,477,355	$186,460,000	$175,609,919	$161,327,436
Two dollars	60,578,352	65,152,000	62,876,236	62,854,116
Five dollars	224,542,952	145,580,000	142,944,765	227,178,187
Ten dollars	15,191,171	14,240,000	8,673,560	20,757,611
Twenty dollars	5,829,290	.....	1,340,620	4,488,670
Fifty dollars	6,286,860	.....	1,869,100	4,417,760
One hundred dollars	544,020	.....	63,800	480,220
Five hundred dollars	24,000	.....	2,000	22,000
One thousand dollars	25,000	.....	2,000	23,000
Total	463,499,000	411,432,000	393,382,000	481,549,000

CHANGES IN DENOMINATIONS.

There is demand for elasticity in the denominations as well as in the volume of currency at certain seasons of the year, and the burden of supplying the smaller denominations required falls upon the Treasury. Through the process of redeeming the larger denominations of United States currency and issuing smaller denominations in lieu thereof, the Treasury has been enabled to supply the greater part of the demand for such bills.

The total amount of United States paper currency of each denomination issued, redeemed, and outstanding at the close of the fiscal year 1912 is stated in the subjoined table.

Denominations.	Outstanding June 30, 1911.	Fiscal year 1912.		Outstanding June 30, 1912.
		Issued.	Redeemed.	
One dollar	$152,698,314	$186,460,000	$175,626,278	$163,532,036
Two dollars	62,211,666	65,152,000	62,892,847	64,470,819
Five dollars	377,046,982	252,760,000	232,890,705	396,916,277
Ten dollars	349,442,737	164,800,000	152,013,430	362,229,307
Twenty dollars	270,877,726	83,360,000	80,624,690	273,613,036
Fifty dollars	60,421,740	17,000,000	16,095,000	61,326,740
One hundred dollars	84,002,520	20,400,000	18,931,850	85,470,670
Five hundred dollars	22,202,500	3,950,000	3,421,500	22,731,000
One thousand dollars	109,957,500	9,500,000	14,481,000	104,976,500
Five thousand dollars	95,795,000	6,000,000	6,775,000	95,020,000
Ten thousand dollars	224,640,000	107,470,000	90,180,000	241,930,000
Total	1,809,296,685	916,852,000	853,932,300	1,872,216,385
Unknown, destroyed	1,000,000			1,000,000
Net	1,808,296,685	916,852,000	853,932,300	1,871,216,385

It will be observed in the study of the foregoing statement that all denominations outstanding June 30, 1912 (except those of $1,000 and $5,000), were increased during the year.

PIECES OF UNITED STATES PAPER CURRENCY OUTSTANDING.

The steady increase in the number of pieces of United States paper currency outstanding may be seen from a comparative monthly statement thereof for the fiscal years 1911 and 1912, as follows:

Months.	Fiscal year 1911, outstanding.		Fiscal year 1912, outstanding.	
	Number of pieces.	Total value.	Number of pieces.	Total value.
July	296,800,151	$1,711,384,685	311,953,862	$1,809,902,685
August	298,150,785	1,727,018,685	313,376,715	1,811,631,685
September	300,292,197	1,731,062,685	315,080,350	1,816,968,685
October	306,010,929	1,740,126,685	320,864,851	1,832,162,685
November	308,274,554	1,749,719,685	325,081,763	1,843,824,685
December	310,398,145	1,759,579,685	327,702,331	1,850,896,385
January	308,275,844	1,768,867,685	328,978,951	1,870,944,385
February	306,317,973	1,769,834,685	322,490,473	1,854,363,385
March	307,291,279	1,775,514,685	323,892,474	1,866,286,385
April	309,231,795	1,790,864,685	325,096,917	1,871,146,385
May	310,682,227	1,802,561,685	325,967,213	1,868,756,385
June	309,946,146	1,809,296,685	327,329,159	1,872,216,385

PAPER CURRENCY BY DENOMINATIONS, OUTSTANDING JUNE 30, 1912.

The amount of each kind of paper currency outstanding, by denominations, may be seen in the monthly statement for June, 1912:

Denominations.	United States notes.	Treasury notes of 1890.	National-bank notes.	Gold certificates.	Silver certificates.	Total.
One dollar	$1,830,994	$373,606	$343,588		$161,327,436	$163,875,624
Two dollars	1,374,959	241,744	164,312		62,854,116	64,635,131
Five dollars	169,049,930	688,160	141,565,470		227,178,187	538,481,747
Ten dollars	114,137,926	898,470	328,508,870	$226,435,300	20,757,611	690,738,177
Twenty dollars	12,192,432	434,970	224,856,140	256,496,964	4,488,670	498,469,176
Fifty dollars	1,841,375	14,550	16,373,800	55,053,055	4,417,760	77,700,540
One hundred dollars	4,696,400	166,500	35,032,350	80,127,550	480,220	120,503,020
Five hundred dollars	4,470,000		89,500	18,239,000	22,000	22,820,500
One thousand dollars	38,077,000	111,000	23,000	66,765,500	23,000	104,999,500
Five thousand dollars				95,020,000		95,020,000

Denominations.	United States notes.	Treasury notes of 1890.	National-bank notes.	Gold certificates.	Silver certificates.	Total.
Ten thousand dollars	$10,000			$241,920,000		$241,930,000
Fractional parts			$50,684			50,684
Total	347,681,016	$2,929,000	747,007,714	1,040,057,369	$481,549,000	2,619,224,099
Unknown, destroyed	1,000,000		[1] 1,872,722			2,872,722
Net	346,681,016	2,929,000	745,134,992	1,040,057,369	481,549,000	2,616,351,377

[1] Redeemed, but not assorted by denomination.

RATIO OF SMALL DENOMINATIONS TO ALL PAPER CURRENCY.

The ratio of denominations of $10 and less to the total paper currency, by fiscal years since 1906, is given in the statement here:

Dates.	Total paper currency.	Denominations of $10 and less.				
		One dollar.	Two dollars.	Five dollars.	Ten dollars.	Total.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent*
July 1, 1906	$1,953,712,245	5.31	2.51	19.67	27.43	54.93
July 1, 1907	2,111,659,575	5.24	2.69	19.48	25.84	53.26
July 1, 1908	2,345,130,802	4.92	2.46	20.79	26.00	54.19
July 1, 1909	2,375,261,959	5.33	2.44	19.84	25.77	53.40
July 1, 1910	2,419,600,310	5.93	2.54	20.62	26.53	55.62
July 1, 1911	2,538,656,263	6.02	2.45	20.39	26.28	55.16
July 1, 1912	2,619,224,099	6.25	2.46	20.55	26.33	55.65

COST OF PAPER CURRENCY.

Inquiries often reach the Department relating to the production and the cost of the paper currency issued by the United States. Our paper currency is said to be superior to that of any other nation in the world. The quality of the material used and the artistic work of the engraver give us a product that presents almost insurmountable obstacles to those who would profit by false imitations.

As a matter of information it may be stated that the paper used is made by a secret process under Treasury supervision by special contract, renewed every year. The Bureau of Engraving and Printing, a branch of the Department, designs, under the direction of the Secretary, engraves, and prints the notes and certificates complete. This currency is delivered to the Treasurer in packages of 4,000 notes, the product of 1,000 sheets of paper. Such a package is taken as the unit from which to reckon the cost.

With the allowance for every item of expense attending the making, the issue, and the redemption of this paper currency, it appears that the average cost is as follows:

Total average expense of 4,000 notes issued	$52.50
Total average expense of 4,000 notes redeemed	8.54
Aggregate average expense of issue and redemption	61.04

From the foregoing it may be readily ascertained that the average cost for each note is 1.526 cents. Calculations based upon these average expenses of issue and redemption indicate results that will be

very close to the actual cost of maintenance of the paper currency, and such cost for the fiscal years 1911 and 1912 may be studied from the details set forth in the subjoined table.

Total expenses of issue and redemption.

Fiscal years.	Number of pieces.	Cost per 1,000 pieces.	Total cost.
1911.			
Issued	$267,207,921	$13.125	$3,507,103.96
Redeemed	251,189,762	2.135	536,290.14
Total			4,043,394.10
1912.			
Issued	290,809,347	13.125	3,816,872.68
Redeemed	273,426,336	2.135	583,765.23
Total			4,400,637.91

United States paper currency outstanding and cost of maintenance.

Fiscal years.	Amount outstanding.	Cost of maintenance.	
		Amount.	Per cent.
1911	$4,808,296,685	$4,043,394.10	0.223
1912	1,871,216,385	4,400,637.91	.235

In this connection attention is invited to the saving of abrasion on the gold and silver coins held in the Treasury against outstanding certificates and notes, which to all intents and purposes is an offsetting item against the cost of the paper currency issued directly by the Government, though not so treated in the foregoing calculations.

AVERAGE LIFE OF PAPER CURRENCY.

Inquiry and observation lead to the conclusion that the service of our paper currency is materially shortened by the increasing activities of such money in the channels of trade. This is especially noticeable in the smaller denominations, $5 and under.

The average lifetime of each note, by kinds, may be studied in the statement following:

Denominations.	United States notes	Treasury notes.	Gold certificates.	Silver certificates.	National-bank notes.
One dollar	3.11	1.74	.....	1.09	4.41
Two dollars	3.22	1.87	.....	1.26	4.50
Five dollars	3.13	2.96	.....	1.89	2.92
Ten dollars	3.64	3.72	1.68	3.37	2.74
Twenty dollars	5.93	3.99	3.18	3.99	3.12
Fifty dollars	6.14	3.71	3.50	3.08	4.03
One hundred dollars	6.11	3.63	3.55	2.78	3.86
Five hundred dollars	3.78	.....	3.40	1.88	5.23
One thousand dollars	4.12	1.91	3.23	1.41	3.35
Five thousand dollars	.32	.....	1.89	.....	.....
Ten thousand dollars	.16	.....	1.62	.....	.....
All denominations	3.39	2.20	2.47	1.34	2.97

PAPER CURRENCY PREPARED FOR ISSUE AND AMOUNT ISSUED.

The pieces of United States paper currency in circulation are gradually increasing, and numbered 327,329,159 on June 30, 1912, of the total value of $1,872,216,385. It is incumbent upon the Treasury to maintain this great number of pieces and to provide for the annual growth of the smaller denominations in order to meet the needs of business. Experience and forethought prompt the preparation of an adequate volume of paper currency of the kinds and denominations authorized by law in advance of putting same into circulation. Heretofore but little progress has been made in accumulating a sufficient reserve of such bills, but it is hoped that with the improved facilities now in operation the output in future will be ample for this purpose.

The number of pieces and amount of paper currency prepared for issue and the amount issued since 1906 are recorded in the table following:

Fiscal years.	Prepared for issue.			Paper currency issued.		
	Number of notes and certificates.	Total value.	Average value.	Number of notes and certificates.	Total value.	Average value.
1906	157,425,000	$602,172,000	3.825	$172,930,548	$629,826,000	$3.642
1907	178,180,000	679,480,000	3.813	173,093,911	698,273,000	4.034
1908	197,012,000	858,944,000	4.359	188,999,912	804,326,000	4.255
1909	206,898,000	637,320,000	3.080	202,746,192	764,510,000	3.770
1910	235,210,400	809,579,600	3.441	240,990,922	767,115,600	3.183
1911	268,450,000	957,744,000	3.567	267,207,921	913,540,000	3.418
1912	301,302,000	990,096,000	3.286	290,809,347	916,852,000	3.152

Comparison of the issues, by months, for the fiscal years 1911 and 1912 is made in the annexed table:

United States paper currency issued during the fiscal years 1911 and 1912.

Months.	Fiscal year 1911.			Fiscal year 1912.		
	Number of notes and certificates.	Total value.	Average value of notes and certificates.	Number of notes and certificates.	Total value.	Average value of notes and certificates.
July	21,262,272	$64,814,000	$3.048	24,359,190	$74,750,000	$3.068
August	22,482,318	80,720,000	3.590	23,717,538	75,400,000	3.179
September	21,964,785	67,894,000	3.091	22,909,048	73,250,000	3.197
October	23,996,851	70,630,000	2.943	25,812,850	79,530,000	3.081
November	19,816,658	66,300,000	3.345	24,369,960	70,984,000	2.912
December	22,002,085	76,270,000	3.466	24,397,983	74,110,000	3.037
January	24,032,823	91,558,000	3.809	24,773,893	96,390,000	3.890
February	19,564,422	71,484,000	3.653	20,986,685	62,970,000	3.000
March	23,218,396	76,690,000	3.302	24,305,304	81,152,000	3.338
April	22,678,626	82,520,000	3.638	25,460,161	77,518,000	3.044
May	24,163,668	82,770,000	3.425	24,682,372	73,304,000	2.969
June	22,025,017	81,890,000	3.718	25,034,363	77,494,000	3.095
Total	267,207,921	913,540,000	3.418	290,809,347	916,852,000	3.152
Per cent of increase over preceding year	10.8	17.7	.....	8.8	0.4	.....

SUPPLY OF UNITED STATES PAPER CURRENCY HELD IN RESERVE.

A comparison by number of pieces of each denomination and total value of the United States paper currency held in the reserve vault at the close of the fiscal years 1911 and 1912 may be seen here:

Denominations.	Held June 30, 1911.		Held June 30, 1912.	
	Number of pieces.	Total value.	Number of pieces.	Total value.
One dollar	7,636,000	$7,636,000	12,188,000	$12,188,000
Two dollars	2,160,000	4,320,000	5,716,000	11,432,000
Five dollars	7,948,000	39,740,000	5,770,000	28,850,000
Ten dollars	3,624,000	36,240,000	7,376,000	73,760,000
Twenty dollars	2,616,000	52,320,000	2,968,000	59,360,000
Fifty dollars	280,000	14,000,000	740,000	37,000,000
One hundred dollars	142,000	14,200,000	140,000	14,000,000
Five hundred dollars	43,600	21,800,000	35,700	17,850,000
One thousand dollars	29,300	29,300,000	31,800	31,800,000
Five thousand dollars	3,200	16,000,000	2,000	10,000,000
Ten thousand dollars	6,400	64,000,000	5,600	56,000,000
Ten thousand dollars—Order	6,795	67,950,000	8,837	88,370,000
Total	24,495,295	367,506,000	34,981,937	440,610,000

REDEMPTIONS OF PAPER CURRENCY.

There were 273,426,336 pieces of United States paper currency redeemed during the last fiscal year, an increase of 22,236,574 pieces, or 8.85 per cent, over those of the preceding year. The pieces redeemed were 6,218,415 greater than those issued in 1911.

There has been a large and growing increase in redemptions for a number of years past, and the increase which varies from time to time, and is now very large, is due primarily to the following circumstances:

The growth in business activities.

The tendency toward the use of small denominations.

The publicity given to uncleanliness and alleged insanitation of soiled notes, and the consequent demand for cleaner money.

The necessity for maintaining in good condition an increasing volume of outstanding pieces.

The growing practice of payment of wages in factories, shops, etc., weekly and biweekly, as compared with monthly.

The growing popularity of paper money in sections where silver was formerly in the greatest demand.

The transactions, by months, for the past two fiscal years are recorded in the table following.

United States paper currency redeemed during the fiscal years 1911 and 1912.

Months.	Fiscal year 1911.			Fiscal year 1912.		
	Number of notes and certificates.	Total value.	Average value of notes and certificates.	Number of notes and certificates.	Total value.	Average value of notes and certificates.
July	18,389,608	$56,836,200	$3.090	22,351,476	$74,144,000	$3.317
August	21,132,184	65,086,000	3.079	22,294,686	73,671,000	3.304
September	19,823,373	63,850,000	3.220	21,205,410	67,913,000	3.202
October	18,278,119	61,566,000	3.368	20,028,349	64,336,000	3.212
November	17,553,033	56,707,000	3.230	20,152,651	59,322,000	2.943
December	19,878,494	66,410,000	3.340	21,777,812	67,038,300	3.078
January	26,155,124	82,270,000	3.145	23,497,273	76,342,000	3.248
February	21,522,293	70,517,000	3.276	27,475,164	79,551,000	2.895
March	22,244,290	71,010,000	3.192	22,903,304	69,229,000	3.226
April	20,738,910	67,170,000	3.238	24,255,717	72,658,000	2.995
May	22,713,236	71,073,000	3.129	23,812,075	75,694,000	3.178
June	22,761,098	75,155,000	3.302	23,672,419	74,034,000	3.127
Total	251,189,762	807,650,200	3.215	273,426,336	853,932,300	3.123
Per cent of increase over preceding year	16.2	7.31	.....	8.85	5.7	.....

The subtreasury offices (except San Francisco) continue to cancel their redemptions of United States paper currency, which they ship to the Treasury by registered mail in such manner as to practically provide against loss. The plan is working satisfactorily and effecting a large saving in transportation charges as compared with the bills for such services in former years under contract rates by express.

STANDARD SILVER DOLLARS.

The standard silver dollars shipped to depositors therefor at the expense of the consignee for transportation charges during the last fiscal year were $11,841,874, a decrease of $2,218,661 as compared with such shipments in 1911. The transactions for the past three years show a gradual reduction in the shipment of these silver dollars.

The shipments, by months, for the past three fiscal years are set forth in the statement following.

Movement of standard silver dollars.

Month.	Fiscal year.		
	1910	1911	1912
July	$1,182,000	$951,425	$815,005
August	1,747,260	1,648,880	1,301,925
September	1,968,575	2,129,050	1,776,545
October	1,672,975	1,943,925	1,514,095
November	1,353,490	1,517,845	1,098,659
December	1,323,939	1,420,130	1,282,215
January	474,550	442,650	372,850
February	655,740	656,000	565,980
March	979,750	908,975	663,175
April	1,026,330	748,500	808,000
May	928,325	784,400	825,395
June	1,071,800	908,755	818,030
Total	14,384,734	14,060,535	11,841,874

SUBSIDIARY SILVER COIN.

The general stock of subsidiary silver coin in the country at the close of the fiscal year 1912 was $170,588,205, an increase of $10,980,841, as compared with that of 1911. The amount of these coins shipped to depositors therefor in 1912 was $21,476,457.40 as against like shipments of $21,956,847.80 in 1911, a decrease of $480,390.40.

The subsidiary silver coins are redeemable in the lawful money of the United States, and under the operation of this provision of law there is usually an accumulation of these coins in the Treasury offices from January to June, but after this period the seasonable movement begins and great quantities are distributed, either to depositors therefor by express, at the expense of the consignee for transportation charges, or are paid over the counter at subtreasuries in exchange for other kinds of money.

The amount shipped to depositors therefor, by months, during the past three fiscal years is recorded in the table following:

Movement of subsidiary silver coins.

Months.	Fiscal year.		
	1910 [1]	1911	1912
July	$2,982,761.45	$1,510,570.00	$1,497,801.90
August	3,737,759.40	2,133,770.00	2,037,520.00
September	5,866,250.30	2,642,690.00	2,801,906.00
October	5,694,439.70	3,003,850.40	2,614,145.00
November	4,532,163.00	2,675,560.00	2,778,510.20
December	4,636,027.40	2,066,918.60	2,618,539.80
January	1,711,884.20	824,964.00	816,054.00
February	2,140,215.10	998,970.00	937,175.00
March	2,924,952.20	1,291,550.00	1,120,893.80
April	2,841,488.60	1,495,390.20	1,305,515.50
May	2,915,057.20	1,671,450.00	1,527,466.00
June	3,994,041.15	1,641,164.60	1,420,930.20
Total	43,977,039.70	21,956,847.80	21,476,457.40

[1] Transportation charges paid by the Government.

MINOR COIN.

The demand for the minor coins attest their popularity in the channels of trade. These token coins form no part of the stated stock of money in the country, and they are redeemable in the lawful money of the United States. The supply is seldom in excess of the demand, and therefore there is no accumulation of them in the Treasury offices.

The net addition made to the coinage during the last fiscal year was $2,032,015.86, of which $748,348.71 was in bronze cents and $1,283,667.15 in nickel 5-cent pieces.

The amount of each denomination of minor coin outstanding at the close of the fiscal years 1911 and 1912 may be seen in the statement following:

	Outstanding June 30, 1911 (revised).	Fiscal year 1912.		Outstanding June 30, 1912.
		Coined.	Remelted.	
Copper cents	$1,182,137.67		$77.64	$1,182,060.03
Copper half cents	39,926.11			39,926.11
Copper nickel cents	1,204,001.79		243.23	1,203,758.56
Bronze 1-cent pieces	19,358,623.58	$771,151.95	22,803.24	20,106,972.29
Bronze 2-cent pieces	571,912.78		153.10	571,759.68
Nickel 3-cent pieces	658,030.46		192.93	657,837.53
Nickel 5-cent pieces	30,140,797.90	1,392,188.20	108,521.05	31,424,465.05
Total	53,155,430.29	2,163,340.15	131,991.19	55,186,779.25

These coins can be obtained from the Treasury and subtreasuries over the counter in exchange for other kinds of money, or they will be shipped to depositors therefor at the expense of the consignee for transportation charges.

The shipments by offices for the past three fiscal years are recorded in the annexed statement:

Movement of minor coins.

Offices.	Fiscal year.		
	1910	1911	1912
Washington	$96,139.75	$103,210.80	$123,196.07
Baltimore	47,314.50	53,095.00	54,820.00
Boston	179,790.00	164,190.00	160,430.00
Chicago	817,870.00	514,335.00	411,500.00
Cincinnati	276,064.60	268,660.05	272,256.00
New Orleans	95,380.40	189,820.00	209,385.00
New York	1,010,959.70	885,795.00	725,970.00
Philadelphia	424,708.00	341,820.00	328,375.00
St. Louis	342,250.00	333,510.00	247,434.00
San Francisco	193,480.00	90,630.00	77,350.00
Mint, Philadelphia	2,387,739.06	1,250,289.10	1,373,047.60
Mint, San Francisco	3,400.00	10.00	7,089.40
Mint, Denver			11,851.15
Total	5,875,096.01	4,195,364.95	4,002,704.22

* * * * * * *

REDEMPTION OF NATIONAL-BANK NOTES.

There were 46,305 remittances of national-bank notes presented for redemption during the fiscal year 1912 containing $649,954,710, an amount which exceeded the largest sum ever received during any previous year (1910–11) by $98,423,114. The average amount of notes in circulation was $739,940,744 and the redemptions were 87.84 per cent of this sum. The number of notes received was 67,039,704. These notes averaged $9.64 in value, while the average denomination of the outstanding was $10.12. Of the average amount of $5 notes outstanding, 97.62 per cent was redeemed; of the $10 notes, 91 per cent; of the $20 notes, 80.47 per cent; of the $50 notes, 63.36 per

cent; and of the $100 notes, 58.33 per cent. The receipts for the first six months, July to December, were 43.92 per cent of the total for the year; those for the last six months, January to June, were 56.08 per cent. The smallest amount presented during a month was $40,026,992, in September, and the largest was $77,819,645, in January.

Payment was made for notes redeemed as follows: By Treasurer's checks on the various subtreasuries to the amount of $241,465,409, by remittances of $319,249,866 in new United States currency, by remittances of $142,889 in gold, silver, and minor coin, and by credits of $86,164,400 in accounts.

National-bank notes assorted and delivered during the year amounted to $645,011,311. Of this sum $198,550,800, or 30.78 per cent, was returned to the respective banks of issue for further circulation, in 137,804 sealed packages, and there was delivered to the Comptroller of the Currency for destruction and reissue in new notes $417,932,800 in 216,362 packages, and for destruction and retirement from circulation $28,527,711 in 13,083 packages.

Redemptions of national-bank notes during the year have constantly been in excess of the 5 per cent fund required under section 3 of the act of June 20, 1874, to be kept by the banks on deposit in the Treasury of the United States for the redemption of their notes. Consequently that fund has been overdrawn during the whole year and the Treasury has had to advance payment for notes as they were presented out of the general fund. The largest overdraft at one time was $26,927,389.52, on February 3, 1912.

The expenses incurred during the year amounted to $505,735.21, and have been assessed upon the banks in proportion to their notes redeemed at the rate of $0.78233 per $1,000.

As has been stated, the redemptions for the fiscal year 1912 have been the largest in the history of the national-banking system. At the beginning of the year there was a national-bank note balance of $34,359,346.33; at the close, $35,631,875.70, an increase of only $1,272,529.37. The ability of the present force to handle such a great increase in the volume of work is due in large measure to the increased efficiency on the part of the large number of counters added to the roll during the previous year, improvements in methods of work in both the money and bookkeeping branches of the agency, and the facilities for expeditious and safe handling of money and better supervision of employees afforded by the new quarters to which the division was moved during the spring of 1911.

SPURIOUS ISSUES DETECTED IN 1912.

A vast sum of money is annually paid into the Treasury offices, all of which is subjected to examination by experts, and its genuineness during the past fiscal year is attested by the fact that the diligence of the counters detected of spurious issues only $12,317.11 in nominal value in all kinds of currency handled.

Comparison, by items, for the past three fiscal years follows:

Kinds.	1910	1911	1912
United States notes	$4,340.00	$3,796.00	$3,934.00
Treasury notes of 1890	183.00	74.00	27.00
Gold certificates	130.00	150.00	20.00
Silver certificates	953.00	723.00	850.00
National-bank notes	1,802.00	3,978.00	3,279.00
Gold coin	306.50	333.00	324.00
Silver coin	2,625.90	3,075.00	3,118.45
Minor coin	421.35	385.61	157.81
Fractional currency	167.45	153.30	106.85
Compound-interest notes	50.00	200.00	500.00
Total	10,979.20	12,867.91	12,317.11

SPECIAL TRUST FUNDS.

The Treasurer of the United States is custodian of several special trusts, consisting of bonds and other obligations, which are held under provisions of law or by direction of the Secretary of the Treasury.

The kinds of bonds or obligations held on each account and transactions therein during the past fiscal year are recorded in the statement following:

Account and kinds.	Held June 30, 1911.	Fiscal year 1912.		Held June 30, 1912.
		Deposited.	Withdrawn.	
State bonds belonging to the United States:				
Louisiana State bonds	$37,000.00			$37,000.00
North Carolina State bonds	58,000.00			58,000.00
Tennessee State bonds	335,666.66⅔			335,666.66⅔
United States bonds held under special provisions of law: Manhattan Savings Institution	75,000.00			75,000.00
Held for the Secretary of War: Captured bonds of the State of Louisiana	545,480.00			545,480.00
Held for the Secretary of the Treasury: Panama R. R. notes	3,247,332.11			3,247,332.11
Held for the District of Columbia:				
Bonds for account of District contractors	225,920.00	$35,630.00	$63,870.00	197,680.00
Chesapeake & Ohio Canal bonds	84,285.00			84,285.00
Board of audit certificates	20,134.72			20,134.72
Total	4,628,818.49⅔	35,630.00	63,870.00	4,600,578.49⅔

But little progress was made during the past fiscal year toward effecting settlement with the States of Louisiana, North Carolina, and Tennessee for the unpaid matured bonds of those States belonging to the United States.

The General Assembly of the State of Louisiana in July, 1912, passed a joint resolution proposing an amendment to the constitution of the State, authorizing the board of liquidation of the State debt to create a sinking fund and to provide for the payment in full out of the first surplus accruing in the sinking fund the amount of principal and interest due on the bonds of the State, the face value of which aggregates $37,000, and which are held by the United States as trustee for certain Indian funds. This proposition will be submitted to the qualified electors of the State for their approval or rejection at the general election on November 5, 1912.

The State of North Carolina has authorized and appointed commissioners to take under consideration a plan for settling the indebtedness of that State to the United States, but Congress postponed action on a measure providing for representatives on the part of the Government.

Commissioners representing the Government and the State of Tennessee, under provisions of law, have now under consideration a plan for settling with that State.

The bonds held for the Manhattan Savigs Institution are in trust for that institution as indemnity for certain stolen bonds, as provided by act of December 19, 1878 (20 Stat., 589), and will be held for such time as, in the judgment of the Secretary of the Treasury, will secure the Treasurer of the United States against loss.

Recommendation has been made to Congress for authority to return to the State of Louisiana the bonds of that State captured at Shreveport by the Union forces during the War of the Rebellion, now held as a special deposit by the Secretary of War.

The special trust held for the Secretary of the Treasury is composed of notes of the Panama Railroad Co. drawing 4 per cent interest payable to the United States, and is security for money advanced for the equipment and construction of said railroad.

The special trust held for the District of Columbia represents, first, the moneys retained from contractors under provisions of law and invested at the request and risk of said contractors, and second, obligations that belong to the District of Columbia.

DISTRICT OF COLUMBIA.

The transactions of the Treasurer of the United States, ex officio commissioner of the sinking fund of the District of Columbia, pertaining to the affairs of the District are fully set forth in a separate report.

During the fiscal year 1912 the bonds of the funded debt retired amounted to $629,650, resulting in the reduction of the annual interest charge by $22,982.22.

On July 1, 1878, when the Treasurer was charged with the duties of the late commissioners of the sinking fund of the District of Columbia, the bonded debt was $22,106,650; since that date 3.65 per cent bonds have been issued, amounting to $1,254,050, making a total debt of $23,360,700. This sum has been decreased by the operation of the sinking fund and otherwise $15,102,050, leaving outstanding July 1, 1912, $8,258,550 of bonds bearing 3.65 per cent interest.

The annual interest charge on July 1, 1878, was $1,015,759.12 and on July 1, 1912, $301,437.08, showing a reduction of $714,322.04.

The retentions from 35 contracts with the District of Columbia were canceled during the year by the return to the contractors of $57,030 in bonds and $22,058.12 in cash.

At the close of the fiscal year the 10 per cent guaranty fund held for account of contracts amounted to $320,915.28, and is represented by $197,680 in bonds purchased at the request and risk of contractors and $55,112.04 uninvested cash.

The securities of the District in the care and custody of the Treasurer are:

Bonds for account of contractors	$197,680.00
Chesapeake & Ohio Canal bonds	84,285.00
Board of audit certificates	20,134.72
Total	302,099.72

* * * * * * *

LEGISLATION RECOMMENDED.

It is suggested that recommendation to Congress be made in such form as may be deemed advisable for legislation that will authorize favorable action on the following subjects:

1. *Gold certificates for $5.*—There is necessity for increasing the resources of the Treasury for the issue of small denominations of currency. It is believed that the issue of gold certificates for $5 instead of restricting the issue as now to $10 and above will enable the department to respond to the demands for small denominations.

2. *To order gold certificates for $5,000.*—At present gold certificates payable to order are issued in the denomination of $10,000 only. There is demand for such certificates in the denomination of $5,000.

3. *Increased facilities for exchanging worn and defaced United States paper currency for new.*—There is a constant and widespread interest which advocates a cleaner and more sanitary currency. The sentiment is a laudable one and should be attainable, because the expense is but a trifle as compared with the beneficent results. The Government can well afford to replace its paper issues when unfit for circulation.

4. *Increase of the 5 per cent bank-note redemption fund.*—Experience shows that the 5 per cent redemption fund is not adequate for the purposes intended. Throughout the entire last fiscal year the Treasury had to advance money for the redemption of bank notes on the security of the notes themselves. As the notes are not obligations of the Treasury the banks should be required to deposit a greater amount to provide for current redemptions.

5. *Restriction on amount of $5 bank notes.*—It appears that national banks located in commercial centers are not disposed to issue the full amount of $5 notes authorized by law, while the banks located in the interior or outlying sections of the country would largely increase the amount of their $5 notes but for the limitation by statute. Therefore it is believed that the repeal or modification of the provision limiting the $5 notes to one-third in amount of the circulating notes of national banks would be the means of increasing the amount of such notes in circulation, and would accordingly reduce the demand upon the Treasury for United States paper currency of small denominations.

6. *Removing limit on weight of registered package.*—It is believed that the removal of the limit on the weight of a package which may be sent through the registered mail of the United States would facilitate a greater use of this method of transportation; and if followed by an enactment that will authorize the transportation of paper currency to and from the Treasury or between Treasury offices by registered mail insured, it would be in the interest of economical administration.

7. *Personal bonds of officials and employees handling money.*—The matter of personal bond of the Treasurer of the United States is covered by statute enacted in 1789. Of course conditions of administration and operation have radically changed since 1789, and it seems desirable that new or revised legislation should be enacted. The Treasurer of the United States is the only person bonded in his office, and it appears clear that a law might be passed which would secure more protection to the Government and greater fairness to the Treasurer by placing bonded responsibility more directly upon those officials and employees actually handling money and securities.

The work of the Treasurer's office was conducted with accuracy and promptness, evidencing the fidelity and efficiency of the staff and employees of every grade in this office.

Respectfully submitted.

LEE MCCLUNG,
Treasurer of the United States.

Hon. FRANKLIN MACVEAGH,
Secretary of the Treasury.

REPORT OF THE COMPTROLLER OF THE CURRENCY.

TREASURY DEPARTMENT,
OFFICE OF THE COMPTROLLER OF THE CURRENCY,
Washington, D. C., December 2, 1912.

SIR: In compliance with the requirements of section 333 of the Revised Statutes of the United States, the fiftieth annual report of the operations of the Currency Bureau for the year ended October 31, 1912, is herewith submitted.

CONDITION OF NATIONAL BANKS.

The resources and liabilities of national banks in active operation at date of the periodical reports made to the comptroller during the past year are shown in detail in the following table:

Abstract of reports of condition of national banks in the United States from Dec. 5, 1911, to Sept. 4, 1912.

	Dec. 5, 1911—7,328 banks.	Feb. 20, 1912—7,339 banks.	Apr. 18, 1912—7,355 banks.	June 14, 1912—7,372 banks.	Sept. 4, 1912—7,397 banks.
RESOURCES.					
Loans and discounts	$5,659,109,826.52	$5,810,433,940.51	$5,882,166,597.47	$5,953,904.431.85	$6,040,841,270.81
Overdrafts	35,950,532.81	23,982,519.22	19,819,115.69	19,849,391.65	20,168,074.45
U. S. bonds to secure circulation	713,619,820.00	718,696,520.00	719,570,740.00	721,395,970.00	724,085,520.00
U. S. bonds to secure U. S. deposits	44,978,000.00	45,438,480.00	45,414,540.00	46,273,660.00	46,228,460.00
Other bonds to secure U. S. deposits	25,663,796.24	27,096,723.98	29,892,985.12	31,163,415.35	32,479,536.18
U. S. bonds on hand	13,817,970.00	12,551,070.00	10,343,560.00	8,372,540.00	7,804,070.00
Premiums on U. S. bonds	8,785,249.01	7,792.492.19	7,480,771.82	7,455,806.72	7,092,456.00
Bonds, securities, etc.	1,026,555,490.53	1,028,940,025.35	1,028,029,767.72	1,046,619,585.79	1,039,986,552.37
Banking house, furniture, and fixtures	232,516,072.98	234,536,934.76	237,378,708.44	238,577,785.24	240,046,311.47
Other real estate owned	24,737,889.06	26,579,277.63	27,123,748.53	28,047,223.46	28,459,029.88
Due from national banks (not reserve agents)	450,725,912.74	482,418,015.26	459,640 453.32	446,698,023.39	452,087,610.48
Due from State banks and bankers	201,868,057.98	216,423,114.12	204,413,884.93	198,485,414.29	188,829,543.88

Abstract of reports of condition of national banks in the United States from Dec. 5, 1911, to Sept. 4, 1912—Continued.

	Dec. 5, 1911—7,328 banks.	Feb. 20, 1912—7,339 banks.	Apr. 18, 1912—7,355 banks.	June 14, 1912—7,372 banks.	Sept. 4, 1912—7,397 banks.
RESOURCES—contd.					
Due from approved reserve agents	$751,993,136.87	$859,562,144.17	$809,939,983.07	$778,908,242.63	$812,152,402.19
Checks and other cash items	34,648,410.71	28,180,603.17	27,224,613.46	29,175,123.75	37,342,814.74
Exchanges for clearing house	263,725,805.02	245,105,678.01	255,122,693.34	266,040,276.57	296,016,908.75
Bills of other national banks	46,401,672.00	48,786,069.00	49,217,895.00	47,564,277.00	48,592,300.00
Fractional currency, nickels, and cents	3,210,746.04	3,517,886.33	3,452,456.01	3,375,651.33	3,300,352.26
Gold coin	152,374,404.16	149,361,369.14	159,128,760.43	149,294,417.78	150,677,158.16
Gold Treasury certificates	244,711,700.00	290,632,870.00	272,840,370.00	296,922,380.00	267,823,290.00
Gold Treasury certificates (sec. 5192)	40,135,000.00	62,545,000.00	59,155,000.00	59,680,000.00	52,165,000.00
Clearing-house certificates	82,810,000.00	95,975,000.00	85,207,500.00	80,479,000.00	85,706,500.00
Silver dollars	13,508,457.00	14,123,278.00	12,775,940.00	12,637,221.00	12,105,186.00
Silver Treasury certificates	128,911,341.00	136,547,665.00	135,238,037.00	138,569,628.00	126,743,559.00
Silver fractional coin	19,098,713.57	19,843,994.92	19,522,812.95	19,180,041.35	18,239,907.07
Total specie	681,549,615.73	769,029,177.06	743,868,470.38	756,762,688.13	713,460,600.23
Legal-tender notes	181,244,581.00	181,468,221.00	187,820,692.00	188,440,207.00	182,490,494.00
Five per cent redemption fund	34,503,106.56	34,585,892.81	34,643,021.70	34,488,178.75	35,028,032.99
Due from Treasurer United States	7,851,474.67	7,303,198.47	9,584,558.08	10,165,984.25	6,908,419.67
Total	10,443,457,166.47	10,812,427,983.04	10,792,149,256.08	10,861,763,877.15	10,963,400,760.35
LIABILITIES.					
Capital stock paid in	1,026,440,500.00	1,031,193,298.00	1,036,124,945.00	1,033,570,675.00	1,046,012,580.00
Surplus fund	672,891,252.61	685,601,822.65	688,988,578.23	693,990,419.08	701,021,452.71
Undivided profits, less expenses and taxes	258,906,244.99	242,069,421.77	253,678,268.43	256,837,095.57	242,735,174.37
National-bank notes outstanding	702,647,103.00	704,226,003.00	706,979,133.00	708,690,593.00	713,823,118.00
State-bank notes outstanding	27,700.00	27,701.00	27,701.00	27,701.00	27,701.00
Due to other national banks	1,011,873,573.60	1,176,445,299.60	1,104,209,228.89	1,057,911,757.61	1,068,683,209.81
Due to State banks and bankers	522,805,573.78	573,379,393.36	548,015,077.84	522,125,080.11	539,959,859.28
Due to trust companies and savings banks	503,787,016.41	586,986,265.07	552,725,629.47	554,414,137.28	529,299,679.38
Due to approved reserve agents	46,640,165.65	44,403,475.59	43,267,829.74	43,712,443.11	39,545,913.62
Dividends unpaid	1,198,586.67	1,139,570.13	1,304,576.58	1,622,560.16	1,299,534.51
Individual deposits subject to check	4,527,320,617.76	4,620,310,730.11	4,656,221,240.48	4,764,268,468.36	4,808,937,884.36
Demand certificates of deposit	390,724,980.30	399,502,714.40	417,526,063.58	412,288,988.78	407,683,296.92
Time certificates of deposits	469,073,133.60	477,146,973.78	481,299,465.45	494,168,999.76	504,490,811.23
Certified checks	84,841,799.98	73,801,489.94	94,012,039.43	84,756,083.86	97,892,761.41
Cashiers' checks outstanding	64,081,749.52	57,797,323.57	62,992,279.21	69,978,622.60	72,665,253.08
Total individual deposits	5,536,042,281.16	5,630,559,231.80	5,712,051,088.15	5,825,461,163.36	5,891,670,007.00
U. S. and postal savings deposits	36,544,552.22	39,778,839.19	43,516,543.35	47,876,628.48	47,259,053.42
Deposits of U. S. disbursing officers	16,511,468.47	14,965,701.40	10,421,245.03	11,069,352.18	11,968,274.98
Bonds borrowed	34,440,971.32	34,739,522.67	37,408,832.53	38,249,291.44	37,913,129.27
Notes and bills rediscounted	10,697,141.68	6,144,233.07	6,978,004.46	7,670,304.45	15,716,092.06
Bills payable	53,476,339.51	34,370,292.40	38,545,279.27	50,936,000.10	66,658,696.96
Reserved for taxes	6,568,959.29	3,873,492.44	4,818,050.41	5,846,511.65	6,674,012.38
Liabilities other than those above stated	1,957,736.11	2,524,419.90	3,089,244.70	1,752,163.57	3,133,271.60
Total	10,443,457,166.47	10,812,427,983.04	10,792,149,256.08	10,861,763,877.15	10,963,400,760.35

The prosperity of the country in the year just closing is notably shown in the reports relating to the agricultural output, which, for a number of products, exceeds that of any previous year and is attended by average returns per unit and in the aggregate to the producer in excess of those for 1911. Exports from the United States during the ten months ended October aggregated $1,870,000,000 and the imports $1,511,000,000, resulting in a favorable balance of $359,000,000.

Business in general has shared in this prosperity, as is evidenced by the returns from national and other banks of the country. Reports depicting in detail the items of assets and liabilities of 25,195 banks have been tabulated showing aggregate assets of approximately $25,000,000,000. The capital of these financial institutions amounts to approximately $2,010,000,000 and the liabilities to depositors over $17,000,000,000. Compared with 1911 the current returns show increase in capital of $58,400,000, in deposits of $1,117,000,000, and in aggregate assets, $1,355,000,000. Elsewhere in this report information appears relative to the condition of each class of banking institutions in each state and section of the country.

Of the 10,285 national banks chartered from 1863 to October 31, 1912, there are in active operation 7,397 banks, as shown by the reports for September 4, 1912. The paid-in capital is stated at $1,046,012,580; combined surplus and other undivided profits, $943,756,626; circulating notes outstanding, $713,823,118; due to banks, $2,177,488,662; individual deposits, $5,891,670,007; United States deposits, $59,227,328; rediscounts and bills payable, $82,374,789; and aggregate liabilities, $10,963,400,760.

About 60 per cent of the banks' loanable funds is represented by loans and discounts, which aggregate $6,061,009,345. Nearly 17 per cent, or $1,850,584,138, is invested in United States and other bonds and securities, about 7 per cent of the amount being investments in United States bonds, of which $724,085,520 are on deposit with the Treasurer of the United States to secure national bank circulation, $46,228,460 to secure public deposits, and $7,804,070 held in bank unpledged. The premium account on all United States bonds, as shown by the banks' books, is $7,092,456, an amount which is appreciably less than the market value of these securities. Investments in bank premises, furniture and fixtures, and real estate taken for debt total $268,505,340, which is less than 2½ per cent of the aggregate assets. Credits with other banks, that is the amount "due from," are $1,453,069,556; checks and other cash items, including exchanges for clearing house, are $333,359,723; and cash in bank, that is, specie, legal tender notes, bank notes, and minor currency, $947,843,746; these two latter amounts, totaling $1,281,203,469, equal nearly 22 per cent of the liabilities to depositors, the actual cash means being 16 per cent of such liabilities.

On September 1, 1911, there were in operation 7,301 banks, with capital of $1,025,441,384, surplus and other profits, $904,434,537; circulation, $696,982,033; due to other banks, $2,088,187,242; individual deposits, $5,489,995,002; United States deposits, $48,343,741; rediscounts and bills payable, $78,531,117; and aggregate liabilities, $10,379,439,384. The loans and discounts, including overdrafts, aggregated $5,690,561,906, or a fraction less than 55 per cent of the banks' total assets. Investments in United States and other bonds

totaled $1,799,873,725, or 17 per cent of the assets. The amount invested in United States bonds exclusively was $766,218,220, or 7.3 per cent. The premium on these investments in United States bonds was stated at $8,801,366. Bank premises, furniture and fixtures, together with real estate taken for debt, showed an investment of $256,416,542, approximately the same percentage as in 1912. Credits with other banks totaled $1,306,395,076. Checks, cash items, and exchanges for clearing house amounted to $333,503,061, and with cash in bank of $941,362,369, showed aggregate cash means of $1,274,865,430, exceeding slightly 23 per cent of the individual deposit liabilities, the cash in bank exceeding by a fraction over 17 per cent the amount of liabilities of that character.

With a net increase during the year in question of 96 in number of active banks, there was an increase in capital of $20,571,195, together with an addition of $39,322,089 to the surplus and other profits. The increase in bank-note circulation was $16,841,085. In this period individual deposits increased $401,674,995, and United States deposits $11,979,832. On the credit side of the account the following increases are shown: Loans and discounts, $377,430,197; United States bonds, $11,899,830; other bonds, $38,810,583; cash means, $6,338,039; and aggregate resources, $583,961,376.

By reference to the abstracts of the returns from national banks made since September 1, 1911, a steady increase is shown in the volume of loans and discounts, while overdrafts have declined from $35,950,532 on December 5, 1911, to $20,168,074 on September 4, 1912. Bonds deposited as security for circulation increased since December last from $713,619,820 to $724,085,520, while the amount of securities of that character deposited on account of Government deposits increased only from $44,978,000 to $46,228,460. There was a material increase in bonds other than "Governments" deposited as security for public deposits, as the rise was from $25,663,796 to $32,479,536. Investments in bonds and other securities, excluding United States bonds, standing at $1,052,219,286 in December last, increased but slightly until June 14, 1912, when the amount reported was $1,077,783,000, but by September 4 investments of this character had decreased to $1,072,466,088. Immediately available cash means in banks; that is—lawful money, bank notes, exchanges for clearing house, checks, and other cash items—fluctuated but slightly, as it appears that the amount in bank on December 5, 1911, was $1,210,780,830, and on February 20, 1912, $1,276,087,634, or an increase of $65,306,804. By April 18 these items had declined to $1,266,706,820, or by $9,380,814; on June 14 had risen to $1,291,358,223, or an increase of $24,651,403; and by September 4 had again declined—to $1,281,203,469, or by $10,154,754.

The total amount of assets increased from $10,443,457,166 on December 5, 1911, to $10,812,427,983 on February 20, 1912, but declined to $10,792,149,256 on April 18. There was an increase by June 14 to $10,861,763,877, and a further increase to $10,963,400,760 on September 4.

Results of the organization of banks and the increase in capital of existing banks are shown in the gradual increase of the paid-in capital stock from $1,026,440,500 on December 5 to $1,036,124,945 on April 18. By reason, however, of liquidations for consolidation without an increase in capital stock, the June 14 statement showed a

reduction of capital to $1,033,570,675. By September 4, however, there was a notable rise to $1,046,012,580. The surplus fund shows a normal increase from $672,891,252 on December 5, 1911, to $701,-021,452 on September 4, 1912. The payment of dividends by national banks, generally at semiannual periods ending with December and June, show marked fluctuations in the undivided profit account, which on February 20 showed a decline to $242,069,421 from $258,-906,244 in the prior December. The amount in this account on June 14 was $256,837,095, which was depleted by the June 30 dividend to the extent of reducing the fund on September 4, 1912, to $242,735,174. National-bank notes outstanding increased only to a nominal extent from $702,647,103 on December 5, 1911, as shown by the subsequent calls to June 14, 1912, when the amount outstanding was $708,690,593. Between that date and September 4 there was an increase of over $5,000,000, the amount outstanding on the latter date being $713,823,118. Individual deposits increased from $5,536,042,281 in December last to $5,630,559,231 on February 20, to $5,712,051,088 on April 18, to $5,825,461,163 on June 14, and to $5,891,670,007 on September 4. Deposits of the United States, including postal savings and deposits of Government disbursing officers, increased from $53,000,000 in December, 1911, to $59,000,000 on September 4, 1912, the increase apparently being mainly due to the deposit of postal savings funds.

Rediscounts and bills payable, standing at $64,173,481 on December 5, 1911, declined to $40,514,525 in the following February, and reached the maximum during year on September 4, standing at $82,374,789. The relatively limited capital and volume of other loanable funds to the ability of the banks to meet the required accommodations is shown in the summary by geographical divisions, relating to the volume of rediscounts and bills payable. On September 4 the amount of obligations of this character in the New England States was $3,272,000; in the Eastern States, $9,846,000; in the Middle West, $9,035,000; in the Western States, $7,362,000; in the Pacific section, $3,270,000, and in the South the amount shown is $49,587,000, approximately 60 per cent of the total amount of rediscounts and bills payable of all banks.

CHARACTER OF NATIONAL-BANK LOANS.

Supplementing the detailed periodical statements relating to the assets and liabilities of the banks, there is shown in each bank's report a classification of the loans and discounts. For purposes of comparison there is submitted herewith a table showing the amount and percentage of each class of paper held by the banks on September 1, 1910, June 7, 1911, and June 14, 1912. It will be noted that the relative amount of each class of paper shows but slight variations from year to year. One-third of the volume of the paper is shown to be time paper with two or more individual or firm names; one-fifth time paper, single name without other security, the same proportion on time secured by stocks and bonds, etc., leaving slightly over one-fourth in demand paper. Demand paper secured by bonds, etc., represents approximately one-sixth, and demand paper with one or more individual or firm names one-eleventh of all loans.

Table in question follows:

Class.	Sept. 1, 1910.		June 7, 1911.		June 14, 1912.	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
On demand, paper with one or more individual or firm names	$524,306,117	9.6	$529,732,999	9.4	$571,345,681	9.6
On demand, secured by stocks, bonds, and other personal securities	939,111,340	17.2	953,751,600	17.0	985,421,576	16.6
On time, paper with two or more individual or firm names	1,842,517,150	33.7	1,885,135,321	33.6	1,973,453,245	33.1
On time, single-name paper (one person or firm) without other security	1,068,278,898	19.5	1,124,716,389	20.0	1,198,505,689	20.1
On time, secured by stocks, bonds, and other personal securities, or on mortgages or other real-estate security	1,092,947,132	20.0	1,117,502,478	20.0	1,225,178,240	20.6
Total	5,467,160,637	100.0	5,610,838,787	100.0	5,953,904,431	100.0

The distribution and relative proportion of loans and discounts in the banks of New York, in all central reserve cities, other reserve cities, and elsewhere in the country are shown in the accompanying statement:

Banks in—	Sept. 1, 1910.		June 7, 1911.		June 14, 1912.	
	Loans.		Loans.		Loans.	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
New York	$873,880,860	16.0	$903,566,433	16.1	$959,068,755	16.1
New York, Chicago, St. Louis	1,276,992,285	23.3	1,338,814,875	23.8	1,409,950,769	23.6
Other reserve cities	1,454,442,384	26.6	1,496,311,535	26.7	1,580,419,537	26.5
All reserve cities	2,731,434,669	49.9	2,835,126,410	50.5	2,990,370,306	50.1
Country	2,735,725,969	50.1	2,775,712,377	49.5	2,963,534,125	49.9
Total	5,467,160,638	100.0	5,610,838,787	100.0	5,953,904,431	100.0

In view of the fact that approximately one-sixth of the loans of all national banks are made by banks located in the city of New York, the following statement is of interest as showing the amount and character of such notes on comparable dates in 1907 to 1910, and also in 1911 and 1912.

Loans and discounts.	Aug. 22, 1907.	Sept. 23, 1908.	Sept. 1, 1909.	Sept. 1, 1910.	June 7, 1911.	June 14, 1912.
	38 banks.	37 banks.	38 banks.	39 banks.	40 banks.	37 banks.
On demand, paper with one or more individual or firm names	$16,254,018.22	$6,800,529	$7,708,853	$9,948,094	$9,356,484	$17,796,847
On demand, secured by stocks, bonds, and other personal securities	251,867,157.84	374,548,964	385,430,495	328,145,065	331,736,688	326,897,301
On time, paper with two or more individual or firm names	161,108,403.21	146,194,094	145,989,671	176,608,890	177,331,562	171,791,524
On time, single-name paper (one person or firm), without other securities	130,477,323.47	132,737,553	163,098,915	170,708,005	197,030,419	219,172,889
On time, secured by stocks, bonds, and other personal securities, or on real-estate mortgages or other liens on realty	152,414,155.99	245,372,335	223,425,689	188,470,806	188,111,280	223,410,194
Total	712,121,058.73	905,653,475	925,653,623	873,880,860	903,566,433	959,068,755

The amount and class of loans of all national banks on approximate dates in 1902 to 1910 and 1911 and 1912 are shown in the following table:

Date.	Number of banks.	On demand, paper with one or more individual or firm names.	On demand, secured by stocks, bonds, and other personal securites.	On time, paper with two or more individual or firm names.	On time, single-name paper (one person or firm), without other security.	On time, secured by stocks, bonds, and other personal securities, or on mortgages or other real-estate security.	Total.
		Millions.	*Millions.*	*Millions.*	*Millions.*	*Millions*	*Millions.*
Sept. 15, 1902	4,601	$237.3	$706.9	$1,176.4	$517.1	$642.4	$3,280.1
Sept. 9, 1903	5,042	283.1	717.3	1,267.5	558.1	655.4	3,481.4
Sept. 6, 1904	5,412	279.8	818.9	1,316.7	611.0	699.7	3,726.2
Aug. 25, 1905	5,757	320.1	854.1	1,382.2	689.1	753.0	3,998.5
Sept. 4, 1906	6,137	374.7	828.0	1,502.0	776.1	818.1	4,299.0
Aug. 22, 1907	6,544	428.2	832.9	1,648.7	899.5	869.2	4,678.5
Sept. 23, 1908	6,853	395.9	922.7	1,582.4	852.1	997.5	4,750.6
Sept. 1, 1909	6,977	441.5	957.3	1,698.4	971.5	1,060.1	5,128.8
Sept. 1, 1910	7,173	524.3	939.1	1,842.5	1,068.3	1,093.0	5,467.2
June 7, 1911	7,277	529.7	953.8	1,885.1	1,124.7	1,117.5	5,610.8
June 14, 1912	7,372	571.3	985.4	1,973.4	1,198.5	1,225.3	5,953.9

RATES FOR MONEY.

As will be noted by the following statement relating to the range and average rates for money in the New York market, as reported by the William B. Dana Co., rates were normal up to August, but thereafter there was somewhat of a tightening of the money market, the range for call loans on the stock exchange in October being from 3 to 8 per cent, with an average of 5¼ per cent; time loans in that month ranged from 5¼ to 6 per cent; commercial paper, double

name, 60 to 90 days, 5¾ to 6 per cent, and single name, prime and good, from 5¾ to 6½ per cent.

The report in question follows:

Range and average rates for money in the New York market, year ended Oct. 31, 1912.

Character of loans.	1911		1912			
	November.	December.	January.	February.	March.	April.
Call loans, stock exchange:						
Range	2 to 6	2½ to 6	1¾ to 4	1¾ to 2½	1½ to 3	2 to 5
Average	2½	4	2½	2¼	2 7/8	3
Time loans:						
30 days		3¾ to 5	2 to 3			
60 days	3½ to 4	3¾ to 4½	2 to 3½	2½ to 2¾	3 to 3½	3 to 3¾
90 days	3½ to 4	3¾ to 4½	2½ to 3½	2¾ to 3	3 to 3¾	3½ to 3¾
4 months	3½ to 4	4 to 4½	2¾ to 3½	3 to 3½	3½ to 4	3½ to 4
5 months	3½ to 4	4 to 4½	3 to 3½	3 to 3½	3¾ to 4	3½ to 4
6 months	3½ to 4	4 to 4¼	3 to 3¾	3 to 3½	3¾ to 4	3½ to 4
Commercial paper:						
Double names, choice, 60 to 90 days	3½ to 4	4 to 5	3½ to 4½	3½ to 4	3¾ to 4½	4 to 4½
Single names—						
Prime, 4 to 6 months	3½ to 4½	4½ to 5	3½ to 4½	3½ to 4	3¾ to 4½	4 to 4½
Good, 4 to 6 months	4½ to 5	4½ to 5½	4½ to 5	4½	4½ to 5	5

Character of loans.	1912					
	May.	June.	July.	August.	September.	October.
Call loans, stock exchange:						
Range	2½ to 3	2 to 3	2 to 3½	2¼ to 3½	3 to 7½	3 to 8
Average	2¾	2¾	2 7/8	2 7/8	4½	5½
Time loans:						
60 days	2¾ to 3½	3	3 to 3½	3½ to 4	4¾ to 6	5½ to 6
90 days	3 to 3½	3 to 3½	3½ to 3¾	3¾ to 4¾	5 to 6	5½ to 6
4 months	3½ to 3½	3½ to 3½	3½ to 4½	4½ to 5	5 to 6	5½ to 6
5 months	3½ to 3½	3¾ to 3¾	3¾ to 4½	4½ to 5	5 to 6	5½ to 6
6 months	3½ to 3¾	3½ to 4	4 to 4¾	4⅝ to 5	5 to 6	5¼ to 6
Commercial paper:						
Double names, choice, 60 to 90 days	3¾ to 4½	3¾ to 4¼	4 to 4¾	4¾ to 5	5 to 6	5¾ to 6
Single names—						
Prime, 4 to 6 months	3¾ to 4½	3¾ to 4¼	4 to 4¾	4½ to 5½	5½ to 6	5¾ to 6
Good, 4 to 6 months	5	4 to 4¾	4½ to 5¼	5½ to 6	6 to 6½	6½

RESERVE AND DEPOSITS OF NATIONAL BANKS.

Exclusive of United States deposits national banks are required by law to maintain lawful-money reserve for all deposit liabilities. Banks located in New York, Chicago, and St. Louis (central reserve cities) are required to maintain a reserve of 25 per cent; banks in the other reserve cities are required to maintain the same per cent, although one-half of the amount required may be kept on deposit with their reserve agents in central reserve cities; banks located elsewhere than in the two classes of reserve cities are required to maintain a reserve of 15 per cent, of which two-fifths must be held in bank and three-fifths may be kept on deposit with their agents in reserve or central reserve cities.

On December 5, 1911, against deposits subject to reserve aggregating $6,670,804,612, the reserve held was $1,404,400,973, or 21.05 per cent, and including with the available reserve funds in excess thereof on deposits with correspondents the aggregate means available to meet liabilities were $1,649,290,440, an average of 24.72 per cent.

The reserve held by national banks in New York and St. Louis exceeded the legal requirement, while the average for the Chicago banks was but 0.15 of 1 per cent less than the required 25 per cent. The average percentage held by other reserve city banks exceeded the requirement and ranged from a minimum of 19.15 per cent to a maximum of 33.05 per cent. As a general rule, the average in each of these reserve cities approximated or exceeded the legal requirement. Without an exception, the average reserve of all banks in every State, exclusive of the reserve cities, exceeded the 15 per cent requirement, the average being 16.75 per cent. In the city of New York on February 20 the high reserve of 27.04 brought up the average of all central reserve cities to 26.49. On that date the average in other reserve cities was 25.59 per cent and elsewhere in the country 16.48 per cent, making the average for the United States 21.44 per cent. The deposit liabilities on that date were $7,030,641,998, and the reserve held $1,507,514,837. On April 18 both St. Louis and Chicago banks were deficient 0.13 of 1 per cent, but the average in New York of 26.31 per cent brought the average for the three cities up to 25.87 per cent. The average in other reserve cities was 25.61 per cent, in country banks 16.59 per cent, and in the country at large 21.30 per cent. The deposit liabilities on that date were $6,997,244,603 and the reserve $1,490,352,447. By June 14 the deposit liabilities had increased to $7,050,134,993 and the reserve held to $1,505,150,954, or 21.35 per cent. On this date St. Louis only of the central reserve cities was deficient and to the extent of but 0.12 of 1 per cent, the average for the three central reserve cities being 26.19 per cent. The average in the other reserve cities was 25.48 per cent and that of the country banks 16.53 per cent. On the date of the last report of the year, September 4, against liabilities of $7,093,336,535 the banks held reserve of $1,467,739,561, or 20.69 per cent. New York and Chicago banks were slightly deficient and St. Louis slightly excessive, but the average for the three cities was deficient but 0.26 of 1 per cent, standing at 24.74 per cent. On this call the banks in the major portion of the other reserve cities were slightly deficient, making the average for all 24.92 per cent. Country banks still maintained approximately 16 per cent reserve, the exact figures being 16.40 per cent.

Reports from each class of banks have been tabulated to show the legal reserve and also the amount and per cent of all available means to meet the reserve requirements. From these reports the following table has been compiled for each class of banks at the date of each report from December 5, 1911:

Class of banks.	Dec. 5, 1911.		Feb. 20, 1912.		Apr. 18, 1912.		June 14, 1912.		Sept. 4, 1912.	
	Legal reserve.	Available reserve.	Legal reserve.	Available reserve.	Legal reserve.	Available reserve.	Legal reserve.	Available reserve.	Legal reserve.	Available reserve.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Central reserve city banks	25.16	25.16	26.49	26.49	25.87	25.87	26.19	26.19	24.74	24.74
Other reserve city banks	25.34	27.44	25.59	29.38	25.61	25.56	25.48	28.13	24.92	27.39
Country banks	16.75	23.00	16.48	24.32	16.59	23.36	16.53	22.50	16.40	22.91
All banks	21.05	24.72	21.44	26.24	21.30	25.39	21.35	24.94	20.69	24.57

Supplementing the foregoing statement, there is submitted herewith a compilation of the returns for each call for reserve cities and geographical divisions, relating to the amount and per cent of reserve held and the amount held in excess of the legal requirements:

Date of call.	Amount of reserve held.	Per cent reserve held.	Amount of excess reserve.
CENTRAL RESERVE CITIES.			
Dec. 5	$383,087,745	25.16	$2,415,827
Feb. 20	461,243,057	26.49	25,897,845
Apr. 18	435,861,274	25.87	14,592,124
June 14	451,990,229	26.19	20,549,875
Sept. 4	407,650,800	24.74	[1] 4,235,201
OTHER RESERVE CITIES.			
Dec. 5	469,518,426	25.34	6,220,625
Feb. 20	490,613,475	25.69	11,359,687
Apr. 18	491,420,609	25.61	11,715,258
June 14	492,792,874	25.48	9,347,559
Sept. 4	488,572,441	24.92	[1] 1,559,616
TOTAL RESERVE CITIES.			
Dec. 5	852,606,172	25.26	8,636,453
Feb. 20	951,856,532	26.02	37,257,532
Apr. 18	927,281,882	25.73	26,307,381
June 14	944,783,103	25.82	29,897,435
Sept. 4	896,223,241	24.84	[1] 5,794,817
COUNTRY BANKS.			
New England States.			
Dec. 5	54,054,018	16.19	5,775,248
Feb. 20	53,680,252	16.50	4,888,188
Apr. 18	53,405,076	16.28	4,184,674
June 14	53,249,973	16.21	3,985,744
Sept. 4	55,254,787	16.39	4,700,900
Eastern States.			
Dec. 5	163,371,303	16.33	13,327,445
Feb. 20	163,914,379	16.15	11,702,390
Apr. 18	166,761,046	16.25	12,854,346
June 14	165,132,668	16.08	11,092,483
Sept. 4	170,358,046	16.03	10,955,805
Southern States.			
Dec. 5	93,608,532	17.04	11,225,283
Feb. 20	95,851,199	16.75	10,035,725
Apr. 18	97,836,496	17.14	12,203,036
June 14	94,585,858	16.95	10,903,454
Sept. 4	94,659,875	16.74	9,851,100
Middle Western States.			
Dec. 5	149,512,868	16.62	14,538,144
Feb. 20	152,110,509	16.19	11,201,925
Apr. 18	153,936,194	16.37	12,846,102
June 14	156,402,408	16.42	13,549,161
Sept. 4	158,125,103	16.23	11,954,869
Western States.			
Dec. 5	53,242,029	17.11	6,574,766
Feb. 20	52,253,896	16.82	5,642,112
Apr. 18	52,717,066	17.02	6,261,491
June 14	52,578,331	17.08	6,413,541
Sept. 4	54,334,014	16.82	5,867,236
Pacific States.			
Dec. 5	37,298,546	17.72	5,720,734
Feb. 20	37,171,240	17.88	5,995,752
Apr. 18	37,764,210	17.50	5,388,955
June 14	37,850,930	17.60	5,586,258
Sept. 4	38,000,383	17.25	4,963,223

[1] Deficiency.

Date of call.	Amount of reserve held.	Per cent reserve held.	Amount of excess reserve.
COUNTRY BANKS—continued.			
Island Possessions.			
Dec. 5	$707,501	33.89	$394,319
Feb. 20	676,826	31.58	355,313
Apr. 18	660,477	29.98	329,971
June 14	567,684	26.66	248,362
Sept. 4	784,112	33.54	433,453
Total States.			
Dec. 5	551,794,800	16.75	57,555,941
Feb. 20	555,658,304	16.48	49,821,405
Apr. 18	563,070,565	16.59	54,068,575
June 14	560,367,852	16.53	51,779,004
Sept. 4	571,516,320	16.40	48,726,675
Total United States.			
Dec. 5	1,404,400,973	21.05	66,192,393
Feb. 20	1,507,514,837	21.44	87,078,937
Apr. 18	1,490,352,447	21.30	80,375,956
June 14	1,505,150,955	21.35	81,676,439
Sept. 4	1,467,739,561	20.69	42,931,857

SAVINGS DEPOSITORS AND DEPOSITS IN NATIONAL BANKS.

During the past two years especial attention has been given to the work of obtaining returns from national banks in relation to the volume of their savings accounts and the number of participants therein. In an appreciable percentage of banks paying more than nominal rates of interest on deposits, there is a lack of uniformity in the characterization of savings or interest bearing accounts. That this condition exists is evident from the examination of the reports of various banks from date to date, as discrepancies occur in the volume of savings accounts and the number of savings depositors which would not appear if there was a complete segregation of accounts of this character from other deposits. Notwithstanding this fact, it is evident that national banks and commercial banks generally are competing to a certain extent with the savings banks, and the reports show a steady increase in deposits of this character in national banks.

There is nothing in the Federal law authorizing the establishment of a savings department by national banks, but as the right to pay interest on deposits is recognized, the position of the office is that the question of the conduct of a savings or interest department is a matter for the determination of the directors of each bank. Deposits in commercial banks are presumed to be subject to demand, but whether such institutions have the right to enter into a different arrangement with their customers is a matter for determination by the courts. Deposits, of whatever character, however, are subject to the various provisions of the national-bank act with respect to their investment.

The extent to which national banks are securing savings accounts is shown in the following table, which is based upon the reports made at each call from December 5, 1911, to September 4, 1912.

Number of savings depositors and amount of savings deposits in national banks.

Date.	Number of reporting banks.	Number reporting savings deposits.	Number of depositors.	Amount of deposits.	Average deposit.
Dec. 5, 1911	7,328	3,073	2,445,806	$670,492,062.96	$274.14
Feb. 20, 1912	7,339	3,138	2,527,956	700,724,380.43	277.19
Apr. 18, 1912	7,355	3,199	2,574,869	712,534,578.18	276.73
June 14, 1912	7,372	3,220	[1] 2,600,610	719,640,346.23	276.72
Sept. 4, 1912	7,397	3,268	2,709,048	748,247,183.95	276.20

[1] Other depositors, 7,218,687.

CLASSIFICATION OF NATIONAL BANKS BY CAPITAL STOCK.

Elsewhere in this report appears a statement relating to the number and paid-in capital stock of national banks, grouped by States and geographical divisions, the banks being divided into seven classes, namely, those with capital of $25,000, over $25,000 and less than $50,000, $50,000 and less than $100,000, $100,000 and less than $250,000, $250,000 and less than $1,000,000, $1,000,000 and less than $5,000,000, and $5,000,000 and over. The figures in question are taken from the reports of condition of the banks of date September 4, last, and are summarized in the accompanying table.

The number of banks of the first two classes, the large majority of which are of the minimum amount of capital, represent 32.24 per cent in number and 6.02 per cent of the capital of all banks; banks with capital of $50,000 and less than $250,000 are the most numerous, being 58.5 per cent in number and representing 36.19 per cent of the aggregate capital; banks with capital ranging from $250,000 to less than $1,000,000 represent 6.73 per cent in number and 18.67 per cent in capital, while banks with capital of $1,000,000 and less than $5,000,000 are but 2.29 per cent in number, though representing 22.4 per cent of the capital. There are 18 banks, less than one-fourth of 1 per cent of the total, with capital of $5,000,000 and over, the latter representing, however, 16.72 per cent of the capital of all reporting national banks.

The table in question follows:

Number of national banks, classified by capital (paid in), on Sept. 4, 1912.

Class.	Number.	Per cent.	Amount.	Per cent.
$25,000	2,004	27.09	$50,069,730	4.79
Over $25,000 and less than $50,000	381	5.15	12,849,335	1.23
$50,000 and less than $100,000	2,321	31.38	124,452,200	11.90
$100,000 and less than $250,000	2,006	27.12	254,053,385	24.29
$250,000 and less than $1,000,000	498	6.73	195,282,230	18.67
$1,000,000 and less than $5,000,000	169	2.29	234,305,700	22.40
$5,000,000 and over	18	.24	175,000,000	16.72
Grand total	7,397	100.00	1,046,012,580	100.00

RELATION OF CAPITAL TO DEPOSITS, ETC., OF NATIONAL BANKS.

By reference to the following table, relating to the proportion of capital to deposits, loans, and aggregate resources; of capital, surplus, and other profits to individual deposits; and of specie and legal tenders to individual deposits on or about October 1 for the past four

years, it will be noted that there have been no material changes, the capital now standing as $1 to $5.63 of deposits, $1 to $5.77 of loans, $1 to $10.48 of aggregate resources, while the combined capital, surplus, and other profits to deposits is as $1 to $2.96 and specie and legal tender notes to individual deposits as $1 to $6.58.

The table in question follows:

Items.	1909	1910	1911	1912
Capital to individual deposits	$1.00 to $5.30	$1.00 to $5.13	$1.00 to $5.35	$1.00 to $5.63
Capital to loans	1.00 to 5.43	1.00 to 5.45	1.00 to 5.52	1.00 to 5.77
Capital to aggregate resources	1.00 to 10.14	1.00 to 9.80	1.00 to 10.12	1.00 to 10.48
Capital and surplus and other profits to individual deposits	1.00 to 2.87	1.00 to 2.74	1.00 to 2.84	1.00 to 2.96
Specie and legal tenders to individual deposits	1.00 to 5.87	1.00 to 6.04	1.00 to 6.14	1.00 to 6.58

CHANGES IN LOANS, BONDS, CASH, AND DEPOSITS.

In connection with the general summary of the assets and liabilities of the national banks as shown by the periodical returns during the year, a compilation has been made, in thousands of dollars, relating to the volume of loans, investments in bonds, cash and cash items, and individual deposits for each call since September 1, 1911. Following the figures for each date is stated the average of each of the items, by geographical divisions, enabling ready comparisons to be made as to fluctuations.

The table in question follows:

Changes in volume of principal assets and in deposits, by geographical divisions, 1911–12.

[In thousands of dollars.]

Divisions and dates.	Loans.	Bonds, etc.	Cash and cash items.	Individual deposits.
New England States:				
Dec. 5, 1911	$500,413	$162,793	$82,139	$499,126
Feb. 20, 1912	499,639	166,086	76,957	490,412
Apr. 18, 1912	499,200	167,564	84,603	497,496
June 14, 1912	513,890	169,175	80,258	516,921
Sept. 4, 1912	522,594	166,320	81,136	512,014
Average	507,147	166,387	81,018	503,193
Eastern States:				
Dec. 5, 1911	2,094,636	830,154	623,350	2,080,870
Feb. 20, 1912	2,224,408	821,653	687,586	2,146,071
Apr. 18, 1912	2,218,641	812,597	657,793	2,175,554
June 14, 1912	2,248,078	823,726	689,203	2,240,525
Sept. 4, 1912	2,261,785	822,207	671,380	2,250,680
Average	2,209,509	822,067	665,862	2,178,740
Southern States:				
Dec. 5, 1911	717,540	179,093	83,183	653,926
Feb. 20, 1912	716,949	183,111	82,741	671,464
Apr. 18, 1912	727,407	186,230	84,600	673,497
June 14, 1912	737,921	186,575	80,718	659,226
Sept. 4, 1912	770,165	187,303	81,922	669,313
Average	733,996	184,462	82,632	665,485
Middle Western States:				
Dec. 5, 1911	1,596,727	423,611	293,337	1,481,110
Feb. 20, 1912	1,627,272	431,231	302,644	1,503,540
Apr. 18, 1912	1,673,229	435,156	310,935	1,522,259
June 14, 1912	1,671,952	440,949	314,784	1,560,759
Sept. 4, 1912	1,684,101	439,039	312,286	1,596,017
Average	1,650,656	433,997	306,797	1,532,737

Changes in volume of principal assets and in deposits, by geographical divisions, 1911–12— Continued.

Divisions and dates.	Loans.	Bonds, etc.	Cash and cash items.	Individual deposits.
Western States:				
Dec. 5, 1911	$363,136	$97,962	$48,045	$405,867
Feb. 20, 1912	362,649	98,543	52,566	405,619
Apr. 18, 1912	368,885	96,920	53,771	405,885
June 14, 1912	377,329	97,416	54,179	411,480
Sept. 4, 1912	385,306	97,849	55,288	419,637
Average	371,461	97,738	52,769	409,697
Pacific States:				
Dec. 5, 1911	385,363	130,074	72,037	413,515
Feb. 20, 1912	378,087	131,122	73,076	411,790
Apr. 18, 1912	393,360	133,808	74,514	435,663
June 14, 1912	403,142	135,012	71,796	434,689
Sept. 4, 1912	415,382	136,874	78,564	442,030
Average	395,066	133,378	73,997	427,537
Island possessions:				
Dec 5, 1911	1,292	944	592	1,625
Feb. 20, 1912	1,427	971	513	1,661
Apr. 18, 1912	1,442	971	485	1,693
June 14, 1912	1,590	968	414	1,858
Sept. 4, 1912	1,504	987	622	1,975
Average	1,451	968	525	1,762
United States:				
Dec. 5, 1911	5,659,109	1,824,634	1,210,780	5,536,042
Feb. 20, 1912	5,810,433	1,832,722	1,276,087	5,630,559
Apr. 18, 1912	5,882,166	1,833,251	1,266,706	5,712,051
June 14, 1912	5,953,904	1,853,824	1,291,357	5,825,461
Sept. 4, 1912	6,040,841	1,850,583	1,281,203	5,891,670
Average	5,869,290	1,839,002	1,265,226	5,719,156

Supplementing the foregoing statement relative to the principal items of assets and individual deposits of national banks, by geographical divisions, the items in question have been assembled by classes; that is, those relating to banks in central reserve, other reserve cities, elsewhere in the country, and the total. As will be observed, the loans, cash, and individual deposits in the central reserve city banks were greater in amount on September 4, 1912, than on December 5, 1911, while the bond investments declined from $341,390,000 to $304,198,000, a decrease of approximately $37,000,000. The figures in question show an increase in all items in banks in other reserve cities, the investments in bonds increasing from $414,076,000 to $429,063,000, approximately $15,000,000. The amount of loans, bonds, and individual deposits in banks outside of the reserve cities show, with three exceptions, a gradual increase from each report to the one following, the most notable feature being the increase in investments in bonds, which was approximately $48,000,000. The gross increase in investments in bonds by all banks was $63,000,000, but by reason of the reduction in investments of this character by the central reserve city banks of $37,000,000, the net increase of all banks was $26,000,000. The details are shown in the accompanying table.

Loans, bonds, cash, and individual deposits of national banks at date of each call from Dec. 5, 1911, to Sept. 4, 1912, inclusive, in central reserve cities, and other reserve cities, and the country, together with the average for each section, 1911–12.

[In thousands of dollars.]

	Loans.	Bonds, etc.	Cash and cash items.	Individual deposits.
Central reserve cities:				
Dec. 5, 1911	$1,250,396	$341,390	$565,204	$956,035
Feb. 20, 1912	1,409,882	322,504	633,835	1,001,691
Apr. 18, 1912	1,397,010	304,942	612,125	1,021,943
June 14, 1912	1,409,950	320,545	646,416	1,092,759
Sept. 4, 1912	1,383,862	304,198	613,163	1,056,704
Average	1,370,220	318,715	614,148	1,025,826
Other reserve cities:				
Dec. 5, 1911	1,538,654	414,076	333,701	1,355,850
Feb. 20, 1912	1,536,410	423,264	338,136	1,341,851
Apr. 18, 1912	1,560,288	429,901	345,644	1,379,708
June 14, 1912	1,580,419	434,254	338,423	1,420,245
Sept. 4, 1912	1,623,527	429,063	353,057	1,421,411
Average	1,567,859	426,111	341,772	1,383,813
Country banks:				
Dec. 5, 1911	2,870,059	1,069,167	311,875	3,224,156
Feb. 20, 1912	2,864,140	1,086,953	304,115	3,287,016
Apr. 18, 1912	2,924,867	1,098,406	308,936	3,310,398
June 14, 1912	2,963,534	1,109,025	306,517	3,312,455
Sept. 4, 1912	3,033,451	1,117,321	314,981	3,413,554
Average	2,931,210	1,096,174	309,284	3,309,515
Total United States:				
Dec. 5, 1911	5,659,109	1,824,634	1,210,780	5,536,042
Feb. 20, 1912	5,810,433	1,832,722	1,276,087	5,630,559
Apr. 18, 1912	5,882,166	1,833,251	1,266,706	5,712,051
June 14, 1912	5,953,904	1,853,824	1,291,357	5,825,461
Sept. 4, 1912	6,040,841	1,850,583	1,281,203	5,891,670
Average	5,869,290	1,839,002	1,265,226	5,719,156

BOND INVESTMENTS BY NATIONAL BANKS.

From June 7, 1911, to June 14, 1912, the banks increased their investments in bonds and other securities from $1,752,480,889 to $1,853,825,171, the increase being $101,344,282. By reference to the periodical reports it appears that practically 75 per cent of this increase was effected between June and December, 1911, and also that the bulk of the increase was represented by investments of banks outside of the reserve cities. As considerable interest attaches to these investments, a statement is submitted herewith showing the character and amount of each class of these investments, other than United States bonds, owned by the banks on June 7, 1911, and June 14, 1912, which is supplemented by similar information relating to the investments in United States bonds.

The table follows:

Class.	June 7, 1911.	June 14, 1912.
State, county, and municipal bonds	$164,116,007	$179,322,004
Railroad bonds	361,231,068	354,321,271
Other public service corporation bonds	182,212,010	195,452,530
All other bonds	198,646,916	223,500,814
Stocks (presumably taken for debt)	40,806,519	43,097,143
Warrants, claims, judgments, etc	34,035,187	37,884,505
Various securities with the Treasury as security for public deposits	12,168,275	31,163,415
Foreign Government bonds	10,483,971	8,615,102
Other foreign bonds and securities	3,943,466	4,426,217
Total bonds other than United States	1,007,643,419	1,077,783,001
United States bonds to secure circulation	694,214,820	721,395,970
United States bonds to secure United States deposits	40,768,400	46,273,660
United States bonds on hand	9,854,250	8,372,540
Total United States bonds	744,837,470	776,042,170
Total bonds of all classes	1,752,480,889	1,853,825,171

PRODUCTIVITY OF LOANS AND BOND INVESTMENTS.

Practically the entire income of banks is derived from the interest on loans and returns upon investments in bonds and other securities. The total of these two classes of investments, based upon averages of the returns for the year ended September 4, is shown to be $7,708,292,000, $5,869,290,000 representing loans and discounts and $1,839,002,000 investments in bonds and other similar securities. The gross earnings of the banks, as shown by their returns for the year ended June 30, 1912, were $450,043,250, or 5.84 per cent on loans and investments. The percentage of gross earnings from both classes of investments is shown to have varied from a minimum of 5.05 in the New England States to a maximum of 8.33 in the Western States. The percentage shown for the Eastern States was 5.29; Middle Western, 5.75; Pacific, 6.30; and Southern, 6.87. The volume of loans and investments in bonds (averages), together with the amount of gross earnings and the percentage of gross earnings to investments, for each geographical division, are shown in the accompanying table.

	Loans.	Bonds, etc.	Total investments.	Gross earnings.	Percentage of gross earnings to investments in loans, etc.
New England States	$507,147,000.00	$166,387,000.00	$673,534,000.00	$34,043,213.15	5.05
Eastern States	2,209,509,000.00	822,067,000.00	3,031,576,000.00	160,428,741.86	5.29
Southern States	733,996,000.00	184,462,000.00	918,458,000.00	63,135,395.26	6.87
Middle Western States	1,650,656,000.00	433,997,000.00	2,084,653,000.00	119,937,918.42	5.75
Western States	371,461,000.00	97,738,000.00	469,199,000.00	39,069,043.01	8.33
Pacific States	395,066,000.00	133,378,000.00	528,444,000.00	33,277,461.77	6.30
Hawaii	1,451,000.00	968,000.00	2,419,000.00	151,476.62	6.26
Total	5,869,290,000.00	1,839,002,000.00	7,708,292,000.00	450,043,250.09	5.84

PERCENTAGES OF PRINCIPAL ITEMS OF ASSETS AND LIABILITIES OF NATIONAL BANKS.

Loans and discounts, United States bonds, and lawful money representing 70.3 per cent of the aggregate resources of national banks, and capital, surplus, and other undivided profits, and indi-

vidual deposits 71.9 per cent, it is interesting to note the relative percentage of each item and the aggregates during the past 10 years. That the relative proportions varied but slightly from year to year (on or about October 1) will be seen by reference to the accompanying table.

Items.	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
Loans and discounts	55.2	53.4	53.9	54.0	56.1	52.9	53.5	55.6	54.5	55.1
United States bonds	8.6	7.9	7.4	7.8	7.9	7.9	7.6	7.5	7.4	7.1
Lawful money	8.8	7.2	8.9	7.8	8.4	9.6	9.5	8.9	8.6	8.1
Total	72.6	68.5	70.2	69.6	72.4	70.5	70.6	72.0	70.5	70.3
Capital	11.9	11.0	10.7	10.4	10.7	10.2	9.8	10.2	9.9	9.4
Surplus and profits	8.8	9.8	8.3	8.4	8.8	8.5	8.4	8.9	8.7	8.7
Individual deposits	50.0	49.6	51.1	52.4	51.5	50.4	52.3	52.4	52.9	53.8
Total	70.7	70.4	70.1	71.2	70.9	69.1	70.5	71.5	71.5	71.9

UNITED STATES BONDED DEBT AND NATIONAL-BANK HOLDINGS IN DETAIL.

The bonded debt of the United States on October 31, 1912, was $964,631,630 as against $963,349,390 on October 31, 1911, the increase being in Panama 3 per cents to the extent of $10,000 and postal savings bonds to the amount of $1,272,240. All Government bonds, exclusive of the Panama threes and the postal savings two-and-a-halfs, are available as security for national-bank circulation, and of the bonds available $730,257,280 are on deposit with the Treasurer of the United States as security for circulation. As a result of the legislation of 1900, reducing the semiannual tax on national-bank circulation from one-half to one-fourth of 1 per cent where secured by bonds bearing interest at the rate of 2 per cent, the investments by banks in securities of that character now represent 94 per cent of the securities deposited for that purpose. In addition to bonds deposited as security for circulation, national banks have on deposit with the Treasury Department $38,952,500 United States bonds as security for public deposits, and on September 4, 1912, they held in their vaults unpledged Government bonds to the amount of $7,804,070; that is, a fraction in excess of 80 per cent of the bonded debt of the United States is held by national banking associations.

The interest-bearing bonded debt of the United States, the amount of bonds on deposit to secure national-bank circulation and Government deposits, including other bonds on deposit for the latter purpose, on October 31, 1912, are shown in the following table.

Interest-bearing bonded debt of the United States and bonds on deposit to secure national-bank circulation and Government deposits, Oct. 31, 1912.

Class.	Bonded debt.	Bonds on deposit to secure circulation.	Bonds on deposit to secure Government deposits.
Consols of 1930 (2s)	$646,250,150	$601,762,600	$12,516,700
Loan, 1908–1918 (3s)	63,945,460	20,419,220	3,681,300
Loan, 1925 (4s)	118,489,900	26,817,000	3,741,000
Panama Canal loan:			
Series of 1906 (2s)	54,631,980	52,684,280	1,468,500
Series of 1908 (2s)	30,000,000	28,574,180	657,000
Series of 1911 (3s)	50,000,000		16,888,000
Philippine loans and railway bonds (4s)			4,580,000
Porto Rico loans (4s)			688,000
District of Columbia bonds (3.65s)			812,000
Territory of Hawaii bonds (various)			715,000
State, city, and railroad bonds (various)			1,310,000
Postal savings bonds (2½s), 1911–1931 (first series)	41,900		
Postal savings bonds (2½s), 1912–1932 (second series)	417,380		
Postal savings bonds (2½s), 1912–1932 (third series)	854,800		
Total	964,631,630	730,257,280	47,057,500

EARNINGS AND DIVIDENDS OF NATIONAL BANKS.

Section 5212 of the Revised Statutes of the United States provides that within 10 days after a national bank has declared any dividend the amount of such dividend and the amount of net earnings in excess of such dividend shall be reported to the Comptroller of the Currency, but in view of the fact that section 5211 authorizes the comptroller to call for special reports whenever in his judgment they are necessary to a full and complete knowledge of the bank's condition, every bank is required to submit a report of its earnings, regardless of the fact that no dividend may have been declared, at the close of each selected dividend period. Dividend periods, as a general rule, are for the six months ending with June and December of each year, although there are a limited number of banks declaring quarterly dividends and some bimonthly. Heretofore it has been the policy to publish the abstracts covering the semiannual returns, but in this report the returns for the year ended June 30, 1912, have been consolidated, as from a statistical standpoint information relative to earnings and dividends for a full year is more satisfactory than for semiannual periods, as the latter necessitate combination to enable proper comparisons to be made. As heretofore, the abstracts show the condition with respect to earnings and dividends of all national banks in each reserve city, each central reserve city, other reserve cities, and separately each State, together with the aggregates for each geographical section of the country.

The capital on which dividends were paid during the year ended June 30, 1912, was $1,031,383,425; the surplus, $704,346,706.70, and the gross earnings were $450,043,250. The charges against gross earnings were losses and premiums aggregating $42,256,130, or 9.39 per cent, and expenses of $258,730,516, or 57.49 per cent. These deductions left net earnings to the amount of $149,056,603, from which dividends were paid to the amount of $120,300,872, or 11.66 per cent on capital and 6.93 per cent on capital and surplus combined. The net earnings were equivalent to 8.59 per cent of capital and surplus.

The capital, surplus, ratio of surplus to capital, amount and per cent of dividends paid by national banks in each geographical division are shown in the following table:

Number of banks making earning returns for the year ended June 30, 1912, the capital stock, surplus, amount of dividend paid, and percentages of each to capital.

Sections.	Number of banks.	Capital stock.	Surplus.	Per cent of surplus to capital.	Amount of dividends paid.	Per cent of dividends to capital.
New England States	464	$99,651,950	$62,497,581.21	62.72	$7,979,843.18	8.01
Eastern States	1,633	338,312,175	344,304,716.40	101.77	47,352,319.18	14 00
Southern States	1,462	164,556,900	83,833,711.83	50.95	17,437,139.08	10.60
Middle Western States	2,036	274,756,100	142,887,984.53	52.01	29,402,275.18	10.70
Western States	1,238	70,295,500	32,064,608.28	45.61	9,329,943.56	13.27
Pacific States	470	83,200,800	38,503,678.03	46.28	8,754,852.04	10.52
Hawaii	4	610,000	254,426.42	41.71	44,500.00	7.30
Total	7,307	1,031,383,425	704,346,706.70	68.29	120,300,872.22	11.66

Following the abstract of reports of earnings and dividends for the year 1912, appearing in the appendix, is a comparative statement covering the past 43 years. This table shows that the average net earnings annually were $75,726,559; the dividends, $57,142,245, or an average dividend based upon capital stock of 9.17 per cent. The total net earnings for the 43 years were $3,256,242,044, and the aggregate dividends $2,457,116,551.

NATIONAL-BANK NOTES IN CIRCULATION.

Except as permitted by the act of 1908, relating to the issue of so-called "additional currency," the issue of national-bank circulation is limited to the amount of paid-in capital stock with United States interest-bearing registered bonds as security. On September 4, 1912, with paid-in capital of $1,046,012,580, national banks had on deposit with the Treasurer of the United States as security for circulation $724,085,520 United States bonds. The latter amount is a fraction less than 70 per cent of the capital, and shows that with additional deposits of United States bonds the banks might increase their circulation to the extent of $321,927,060; but regardless of this fact there has been only a normal increase in national-bank circulation during the past year, although the maximum during the history of the system was reached on September 4 last, as shown by the banks' reports of condition.

Statistics appear in the appendix showing the percentage of national-bank circulation to capital and to assets at the date of each report made by the banks from 1863 to 1912, and also to the stock of money in the United States on or about June 30 of each year. These statistics show not only a material increase in the amount of national-bank circulation since March 14, 1900, by reason of the legislation of that date, but a constantly increasing percentage as compared with the stock of money in the country. On June 29, 1900, the reports of condition of the banks indicated that circulating notes represented 11.3 per cent of the general stock of currency, whereas on September 4, 1912, they reached 19.5 per cent.

The distribution of national-bank currency, as appears from the reports made by the banks during the current year, is shown in the following table:

Date.	New York.	New York, Chicago, and St. Louis.	Other reserve cities.	All reserve cities.	Country.	Total.
	Millions.	*Millions.*	*Millions.*	*Millions.*	*Millions.*	*Millions.*
Nov. 10, 1910	$49.0	$84.9	$155.6	$240.5	$439.9	$680.4
Jan. 7, 1911	48.1	83.8	157.4	241.2	442.9	684.1
Mar. 7, 1911	47.5	81.0	158.5	239.5	441.2	680.7
June 7, 1911	45.9	77.3	158.3	235.6	446.1	681.7
Sept. 1, 1911	49.6	80.9	161.7	242.6	454.3	696.9
Sept. 4, 1912	47.2	77.7	163.5	241.2	472.6	713.8

Bonds, Circulation, Capital Stock, etc.

At the close of business on October 31, 1912, the number of national banks in existence was 7,428, with paid-in capital stock of $1,053,670,435; bonds deposited with the Treasurer of the United States to secure circulation, $730,257,280; and circulation outstanding secured by bonds, $727,169,316. On the same date there were outstanding circulating notes to the amount of $22,179,543, the redemption of which has been provided for by deposits of lawful money with the Treasurer of the United States by banks reducing their circulation, those in voluntary liquidation, and in the charge of receivers, making the aggregate outstanding bank circulation $749,348,859. As will be noticed by reference to the following table there has been a gradual increase in the number of banks from month to month, and in capital stock, except in the months of June and October, the reductions in those two months being due to the liquidation for consolidation of banks with large capital, the consolidation of the banks not being attended with any increase in capital stock of the absorbing associations. The bond-secured circulation steadily increased from $712,115,338 on November 30, 1911, to $718,548,203 on February 28, 1912. In March, however, by reason of withdrawal of bonds, the bond-secured circulation was reduced approximately $1,500,000, but increased in the next month to $718,604,693 and steadily increased thereafter to $727,169,316 on October 31. Deposits of lawful money to provide for the redemption of circulation to be retired were at the maximum $27,869,790 in March and the minimum on October 31, when the amount was $22,179,543. By reason of an increase of $15,000,000 in bonds securing circulation and a reduction of $5,500,000 in circulation secured by lawful money, there was a net increase during the year of circulation outstanding of $9,584,513.

The number of banks, paid in capital stock, bonds on deposit to secure circulation, and circulation secured by bonds and lawful money monthly from November 30, 1911, to October 31, 1912, together with the average monthly price of 2 per cent consols of 1930, are shown in the accompanying table.

Capital, bonds on deposit to secure circulation, circulation outstanding.

Date.	Number of banks.	Capital.	Bonds on deposit.	Average monthly price of 2 per cent consols, 1930.	Circulation secured by—		Total circulation outstanding.[1]
					Bonds.	Lawful money.	
1911.							
Nov. 30	7,334	$1,032,602,135	$715,560,170	100.4167	$712,115,338	$27,649,008	$739,764,346
Dec. 31	7,340	1,033,302,135	717,578,120	100.4130	714,363,068	26,240,119	740,603,187
1912.							
Jan. 31	7,348	1,036,132,435	719,811,320	100.3822	715,493,996	26,167,972	741,661,968
Feb. 28	7,353	1,038,495,435	722,026,920	100.3995	718,548,203	25,724,070	744,272,273
Mar. 31	7,365	1,041,410,435	721,315,120	100.9808	717,001,493	27,869,790	744,871,283
Apr. 30	7,372	1,043,705,435	723,035,910	101.2500	718,604,693	27,115,655	745,720,348
May 31	7,387	1,045,170,435	724,265,600	101.2500	719,861,030	25,631,642	745,492,672
June 30	7,394	1,040,545,435	724,493,740	101.0100	720,424,110	24,710,882	745,134,992
July 31	7,400	1,054,350,435	725,505,460	100.8750	721,623,148	23,282,793	744,905,941
Aug. 31	7,410	1,056,575,435	727,317,530	100.9231	723,905,556	22,595,751	746,501,307
Sept. 30	7,422	1,056,775,435	728,984,230	101.2500	725,395,343	22,384,311	747,779,654
Oct. 31	7,428	1,053,670,435	730,257,280	101.2548	727,169,316	22,179,543	[1] 749,348,859

[1] Includes $74,679 gold bank notes.

CIRCULATION ISSUED, REDEEMED, AND OUTSTANDING.

From the date of the first issue on December 21, 1863, to October 31, 1912, national-bank circulation, exclusive of gold bank notes, has been issued to the amount of $5,922,574,825. The redemptions aggregated $5,172,102,476, leaving outstanding at the close of the current year, exclusive of gold bank notes and unredeemed fractions, $750,472,349. Issues during the current year on account of redemptions, issues to new banks, and to those increasing their circulation, amounted to $462,388,390. In addition to the issues to the banks there were withdrawn from the vaults, canceled and destroyed, notes to the amount of $20,459,820 by reason of liquidations and failures of banks for the account of which these notes were held.

To meet possible demands for additional currency by reason of the legislation of May 30, 1908, incomplete notes of every bank to the extent of 50 per cent of the capital are held in the vaults of the office, the aggregate amount so held being $539,164,590.

Gold bank notes to the amount of $3,465,240 were issued under authority of the act of 1870 by banks organized for the specific purpose of issuing circulating notes redeemable in gold. All of these banks, however, were liquidated or changed to national-currency banks prior to 1884, hence no notes of that character have been issued since that date. The records of the office show that there are still outstanding national gold bank notes to the amount of $74,679.

With the exception of the Irvington National Bank, Irvington, N. Y., and the Rogers National Bank, Jefferson, Tex., each capitalized for $25,000, every national bank in the system is a bank of issue. The two banks in question have on deposit with the treasurer the requisite amount of United States bonds, but neither has taken advantage of the permissive feature of taking out circulation on their bond deposit.

Prior to 1879, the date of the resumption of specie payments, national-bank notes of the denomination of $1 and $2 were per-

mitted to be issued, but since that year the minimum denomination was $5. With that restriction there were no limitations on the amount of each denomination of bank currency issuable upon the security of bonds until March 14, 1900, when the law was amended to limit the proportion of notes of the denomination of $5 to one-third of each bank's issue. In 1900 $5 notes represented 31.2 per cent of the aggregate amount of national-bank circulation outstanding, and by reason of that legislation the proportion steadily and materially declined to 13.6 per cent on October 31, 1904. Thereafter there was a gradual increase to 20.05 per cent on October 31, 1909, and on October 31, 1912, notes of this denomination constituted 18.65 per cent of the total outstanding.

In the following table is shown the amount of circulation of each denomination outstanding on March 14, 1900, and October 31, 1912:

Denominations.	Mar. 14, 1900.	Oct. 31, 1912.
Ones	$348,275.00	$343,587.00
Twos	167,466.00	164,312.00
Fives	79,310,710.00	139,997,040.00
Tens	79,378,160.00	330,089,730.00
Twenties	58,770,660.00	227,332,780.00
Fifties	11,784,150.00	17,358,150.00
One hundreds	24,103,400.00	35,076,250.00
Five hundreds	104,000.00	87,500.00
One thousands	27,000.00	23,000.00
Unredeemed fractions	32,409.00	50,918.00
	----------	750,523,267.00
Less notes redeemed but not assorted by denominations	----------	1,249,087.00
Total	254,026,230.00	[1] 749,274,180.00
Circulation secured by lawful money	38,004,155.00	22,104,864.00
Circulation secured by bonds	216,022,075.00	727,169,316.00

[1] Exclusive of fractions and of $74,679 gold bank notes.

NATIONAL BANK REDEMPTION AGENCY RECEIPTS AND REDEMPTIONS.

The act of June 20, 1874, requires that every national bank shall at all times keep and have on deposit in the Treasury of the United States in lawful money of the United States a sum equal to 5 per cent of its circulation, to be held and used for the redemption of such circulation. It is further provided that when the circulating notes of any bank are presented for redemption to the Treasury of the United States they shall be redeemed and the notes so redeemed shall be charged by the Treasurer to the respective issuing banks. Subsequent to redemption all notes fit for circulation are returned to the bank of issue, and those worn, defaced, mutilated, or otherwise unfit for circulation are delivered to the Comptroller of the Currency to be destroyed and replaced by new issues as provided by law. The banks are required to reimburse to the Treasury the charges for transportation and cost of assorting notes, the amount assessed upon each bank being based upon the amount of its notes that are redeemed.

In the year ended October 31, 1912, the national bank redemption agency received for redemption circulating notes to the amount of $669,359,343, of which $219,324,000, being fit for circulation, were returned to the issuing banks. The monthly receipts for redemption during the year ranged from a maximum of $77,819,645 in January to a minimum of $41,816,565 in September, the average receipts per

month being $55,779,945. The total receipts for the year equaled 89.89 per cent of the average amount outstanding.

Redemptions by months from November, 1911, to October, 1912, are shown in the following statement:

November, 1911	$46,646,904
December, 1911	54,363,693
January, 1912	77,819,645
February, 1912	50,283,920
March, 1912	53,149,946
April, 1912	55,320,499
May, 1912	65,929,473
June, 1912	61,987,331
July, 1912	59,666,461
August, 1912	54,271,136
September, 1912	41,816,565
October, 1912	48,103,770
Total	669,359,343

Of the total receipts for redemption $571,483,500, or 85.38 per cent, were shipped from the eight cities hereinafter named, and of the receipts from these cities $333,358,000, or 49.8 per cent, were from the city of New York.

Sources from which notes were received for redemption during the year, together with the amount received from the cities named, and from all other sources, are shown in the following statement:

New York	$333,358,000
Chicago	74,164,500
Boston	54,650,000
Philadelphia	44,826,000
Saint Louis	29,011,000
Cincinnati	14,946,000
Baltimore	14,104,000
New Orleans	6,424,000
Total	571,483,500
All other sources	97,875,843
Total	669,359,343

PROFIT ON NATIONAL BANK CIRCULATION.

That the margin of profit on the issue of national bank circulation is not as great as generally assumed is realized when it is known that the amount of circulation issued is less than 70 per cent of the amount issuable, the measure of the latter being the paid-in capital stock of the national banks.

In computing the profit on the issue of national-bank circulation it is assumed that money is worth 6 per cent. Assuming that a bank with a capital of $100,000 purchases a like amount of Government bonds to be deposited with the Treasury as security for circulation, the measure of profit is then the difference between the interest on the cost of the bonds at 6 per cent and the net receipts from the issue of $100,000 of national-bank notes. The gross receipts are represented by the interest on the bonds and the interest on the circulation loaned at 6 per cent, from which are deducted taxes and expenses incident to the engraving of the plates for printing the circulation, redemption charges, etc., and sinking fund to provide for the cost of the bonds in

excess of par. The actuary of the Treasury Department has made computations for this report, which will be found in the appendix, on the profit on circulation based on the deposit of $100,000 of United States consols of 1930, 4 per cent loan of 1925, and the Panama Canal loan, at the average net price monthly of bonds during the year ended October 31, 1912. These computations show the greater measure of profit on circulation secured by Panama Canal bonds treated as maturing on August 1, 1936. It is seen that in January last this issue of bonds was obtainable at par, hence on $100,000 of an investment the banks received $100,000 of circulation, obtaining $2,000 interest on the bonds and $6,000 on the loaning of the circulation, making the gross receipts $8,000. The tax was $500, expenses, $62.50, making the net deductions $562.50. The net receipts were therefore $7,437.50, which exceeded by $1,437.50 the interest on the cost of bonds at 6 per cent. That is, the profit, under these conditions, on the issue of circulation was 1.438 per cent in excess of 6 per cent on the amount of the investment in bonds. Based upon the October price of the Panama Canal bonds, namely, 101.25, the percentage of profit upon circulation in excess of 6 per cent on the investment in the bonds was 1.322.

CHANGE IN DESIGN AND SIZE OF NOTES.

The Secretary of the Treasury has approved a plan for systematizing the designs of United States notes, coin certificates, and national-bank notes, and simultaneously the reduction of the size of all notes. It is the purpose to make the notes more artistic and at the same time to give them added security in the circumvention of counterfeiting. The number of designs will be reduced from 19 to 9. The change determined upon will also reduce the number of plates necessary to print national-bank notes from 12,000 to 200, thus effecting not only an economy in the printing of the notes but a saving to the banks interested.

The reduction in size of the notes will enable the storage capacity of the department and bank vaults to be increased about 25 per cent, and it is believed that with the reduction in size the folding of notes, to a certain extent, will be obviated, resulting in their greater longevity.

The length of time required to effect the changes in designs and size of notes is stated at about 18 months.

EXPENSES OF THE BANKS INCIDENT TO THE ISSUE OF CIRCULATION AND EXPENSES OF THE CURRENCY BUREAU.

For the year ended June 30, 1912, the expenses of national banks in connection with the issue of circulation aggregated $4,251,108.74, of which the semiannual tax on circulation was $3,690,313.53; cost of redemption of notes, $505,735.21; cost of plates for new banks and those extending their charters, or duplicates of original plates of other banks, $55,060. The Treasurer states the cost of redemption of national-bank circulation per $1,000 at $0.78233.

In addition to the expenses stated, assessments for examination of national banks during the year were paid to the amount of $526,169.76. The corporation tax returns to the Internal Revenue

Bureau by national banks are not tabulated separately, but are included with returns from State banks and other financial institutions; but from a careful examination of the reports of earnings of national banks for the year ended December 31, 1911, it would appear that the tax, on earnings of each bank in excess of $5,000, produced in the aggregate approximately $1,168,000. This result is obtained by ascertaining the net earnings of each bank for the year in excess of the limit not taxable, that is, $5,000, such net earnings being stated at $116,829,000. Assuming the approximate correctness of the calculation of the corporation tax, it appears that the national banks have paid in taxes to the Government during the past year over $4,858,000.

The expenses of the currency bureau for the year ended June 30, 1912, that is, for special dies, plates, printing, etc., and for salaries, excluding those reimbursed by national banks, were $670,528.15. From the date of the organization of the bureau in May, 1863, the total expenses of the office, excluding contingent expenses not paid by the comptroller but from the general appropriation for contingent expenses of the Treasury Department no separate account of which is kept, aggregated $14,596,167.53.

The total taxes paid to the Government by national banks on capital and deposits to July 1, 1883, on capital and surplus under the war-revenue act of 1898, and on circulation aggregate $194,383,516.40, and with the addition of the corporation tax for the years 1909, 1910, and 1911, estimated at $3,668,000, the total payments to the Government by these banks is shown to be over $198,000,000, or more than 13 times the amount appropriated for the conduct of the business of the currency bureau during its entire existence.

In the appendix statistics will be found showing by years the amount of tax paid on circulation, the cost of redemption of notes, assessments for bank plates, assessments for examiners' fees, together with the tax paid on capital and deposits during the periods for which tax on those items was imposed and the estimate of taxes paid under the corporation tax act.

ORGANIZATIONS OF NATIONAL BANKS.

In the year ended October 31 last charters were issued to 188 national banking associations, making the number chartered from 1863 to date 10,285. Applications to organize national banks, including conversions of State banks, numbered 262, of which 192 were approved and 35 rejected. Rejections were based, as a rule, upon information received with respect to local conditions; that is, the lack of a satisfactory field for the operation of a bank, either by reason of limited population and business or existing banking facilities. In other cases rejections were based upon the reputed character of the applicants and others interested. In cases of the rejection of applications to convert State banks, action was based upon information received to the effect that the management of the State institution had not been successful or its business had not been conducted in conformity with the laws of the State from which the charter was received.

The capital at organization of the 188 associations chartered during the year was $16,080,000. The gross increase in capital

during the year was $43,875 300, but by reason of voluntary liquidations, reductions of capital and failures, the net increase was but $21,038,300, the aggregate authorized capital of all national banks on October 31, 1912, being $1,053,670,435.

Of the 10,285 banks chartered, 7,428 are in active operation, 2,357 having been placed in voluntary liquidation and 500 in the charge of receivers. Changes from the State to the national system during the existence of the system are shown in the conversion of 1,692 banks, with capital at date of conversion of $337,985,928.

In conformity with the provisions of the act of March 14, 1900, 3,196 banks have been chartered with individual capital of less than $50,000, and generally with the minimum amount; that is, $25,000, but by reason of the organization of a limited number of banks with capital between $25,000 and $50,000, the average capital of the banks organized under the act in question is shown to have been $26,070, the aggregate being $83,320,500.

The policy of permitting the organization of national banks with capital of less than $50,000 was questioned at the time the provision was under consideration as well as subsequent to the enactment of the law, but statistics evidence the fact that these small banks have generally been successful and supplied their communities with desirable banking facilities. An investigation was made last year with respect to the earning power of the banks of various classes, based upon volume of capital, and it was shown that the dividends paid by banks with minimum capital averaged 8.05 per cent, as against an average of 10.26 per cent for all banks, and that dividends based on capital and surplus averaged 6.3 per cent against an average for all banks of 6.17 per cent. It further appeared that a fraction less than 1 per cent of banks of this character failed since 1900, against nearly 5 per cent for all national banks failing since 1865. It also appears that the creditors of these small insolvent banks have been paid a higher rate of dividend than the average for all insolvent banks excluding those with capital of $1,000,000 and over. Approximately 82 per cent has been received by creditors of all insolvent national banks, and 81.14 per cent by creditors of the small banks, the highest average, 94.63 per cent, being paid by the banks with capital of $1,000,000 and over.

Since March 14, 1900, 1,825 banks have been organized under the act of 1864, the aggregate capital being $237,442,800, and with individual capital of $50,000 or more. Of the banks chartered during this period, 773 were conversions of State banks, with capital of $58,765,800; 1,528 were reorganizations of State or private banks, with capital aggregating $107,102,000; and 2,720 banks of primary organization, with capital of $154,895,500.

The total number of banks chartered from March 14, 1900, to October 31, 1912, was 5,021, with capital of $320,763,300. The number organized in this period exceeded by 1,404 the number of banks in active operation on March 14, 1900.

Classification, based upon capital stock and location by States and geographical divisions, of national banks organized from March 14, 1900, to October 31, 1912, is shown in the following table.

Summary, by States, geographical divisions, and classes, of national banks organized from Mar. 14, 1900, to Oct. 31, 1912, and the paid-in capital stock of all reporting national banks on Sept. 4, 1912.

	Capital $25,000.		Capital over $25,000 and less than $50,000.		Capital $50,000 and over.		Total organizations.		National banks reporting Sept. 4, 1912.	
	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital paid in.
New England States.										
Maine	4	$100,000			7	$385,000	11	$485,000	70	$7,850,000
New Hampshire	4	100,000	1	$30,000	2	200,000	7	330,000	56	5,235,000
Vermont	5	125,000			2	150,000	7	275,000	50	5,160,000
Massachusetts	2	50,000			19	4,450,000	21	4,500,000	186	61,492,500
Rhode Island					1	500,000	1	500,000	22	6,775,250
Connecticut	4	100,000			5	250,000	9	350,000	79	19,264,200
Total	19	475,000	1	30,000	36	5,935,000	56	6,440,000	463	105,776,950
Eastern States.										
New York	104	2,600,000	9	287,500	102	18,220,000	215	21,107,500	471	171,600,485
New Jersey	54	1,350,000	8	240,000	42	3,610,000	104	5,200,000	198	22,217,080
Pennsylvania	226	5,650,000	24	807,000	225	24,190,000	475	30,647,000	834	118,034,390
Delaware	6	150,000	3	95,000			9	245,000	28	2,423,985
Maryland	32	800,000	5	172,000	13	1,480,000	50	2,452,000	108	17,607,710
District of Columbia					4	1,250,000	4	1,250,000	11	6,102,000
Total	422	10,550,000	49	1,601,500	386	48,750,000	857	60,901,500	1,650	337,985,650
Southern States.										
Virginia	38	1,250,000	11	396,000	44	4,865,000	105	6,511,000	131	17,443,500
West Virginia	50	950,000	12	425,000	40	3,315,000	90	4,690,000	111	9,742,000
North Carolina	21	525,000	4	130,000	30	3,160,000	55	3,815,000	73	8,610,000
South Carolina	13	325,000			22	2,335,000	35	2,660,000	46	5,735,000
Georgia	25	625,000	20	675,000	51	4,850,000	96	6,150,000	114	14,709,500
Florida	7	175,000	5	165,000	27	5,175,000	39	5,515,000	48	7,220,000
Alabama	35	875,000	10	304,500	33	2,775,000	78	3,954,500	85	9,700,000
Mississippi	7	175,000	3	90,000	19	1,815,000	29	2,080,000	31	3,255,000
Louisiana	12	300,000	1	30,000	20	3,610,000	33	3,940,000	33	8,345,000
Texas	229	5,725,000	84	2,686,000	142	16,560,000	455	24,971,000	515	48,220,600
Arkansas	21	525,000	1	30,000	26	2,070,000	48	2,625,000	49	5,035,000
Kentucky	53	1,325,000	7	230,000	35	5,270,000	95	6,825,000	144	17,540,900
Tennessee	35	875,000	6	180,000	32	3,435,000	73	4,490,000	103	12,562,500
Total	546	13,650,000	164	5,341,500	521	59,235,000	1,231	78,226,500	1,483	168,119,000
Middle Western States.										
Ohio	109	2,725,000	19	658,000	88	12,825,000	216	16,208,000	378	61,484,100
Indiana	90	2,250,000	15	483,000	70	10,300,000	175	13,033,000	254	27,608,000
Illinois	163	4,075,000	19	663,500	94	14,250,000	276	18,988,500	448	75,440,000
Michigan	14	350,000	4	130,000	27	4,890,000	45	5,370,000	99	15,010,000
Wisconsin	36	900,000	4	125,000	29	3,450,000	69	4,475,000	128	17,080,000
Minnesota	177	4,425,000	15	471,000	30	4,700,000	222	9,596,000	272	22,836,000
Iowa	115	2,875,000	21	710,000	65	3,970,000	201	7,555,000	338	22,280,320
Missouri	35	875,000	14	450,000	41	15,885,000	90	17,210,000	133	36,015,000
Total	739	18,475,000	111	3,690,500	444	70,270,000	1,294	92,435,500	2,050	277,753,420
Western States.										
North Dakota	122	3,050,000	7	215,000	9	500,000	138	3,765,000	146	5,218,000
South Dakota	70	1,750,000	4	120,000	13	700,000	87	2,570,000	103	4,185,000
Nebraska	104	2,600,000	20	715,000	38	3,335,000	162	6,650,000	245	16,240,000
Kansas	93	2,325,000	11	390,000	30	2,300,000	134	5,015,000	211	12,167,500
Montana	23	575,000	4	130,000	16	1,340,000	43	2,045,000	58	4,960,000
Wyoming	12	300,000			11	625,000	23	925,000	29	1,735,000
Colorado	52	1,300,000	11	361,000	38	3,310,000	101	4,971,000	126	10,890,000
New Mexico	24	600,000	4	125,000	11	625,000	39	1,350,000	39	2,115,000
Oklahoma	326	8,150,000	28	920,000	65	4,955,000	419	14,025,000	300	13,542,500
Total	826	20,650,000	89	2,976,000	231	17,690,000	1,146	41,316,000	1,257	71,053,000

Summary, by States, geographical divisions, and classes, of national banks organized from Mar. 14, 1900, to Oct. 31, 1912, etc.—Continued.

	Capital $25,000.		Capital over $25,000 and less than $50,000.		Capital $50,000 and over.		Total organizations.		National banks reporting Sept. 4, 1912.	
	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital paid in.
Pacific States.										
Washington	34	$850,000	2	$70,000	31	$3,545,000	67	$4,465,000	80	$12,225,000
Oregon	32	800,000	3	91,000	25	1,695,000	60	2,586,000	81	8,686,000
California	101	2,525,000	6	190,000	114	26,112,800	221	28,827,800	231	54,521,560
Idaho	29	725,000	5	170,000	14	1,010,000	48	1,905,000	50	3,080,000
Utah	7	175,000	1	30,000	5	1,025,000	13	1,230,000	22	3,305,000
Nevada	3	75,000			9	1,225,000	12	1,300,000	11	1,742,000
Arizona	4	100,000	1	30,000	5	250,000	10	380,000	13	1,055,000
Alaska					1	50,000	1	50,000	2	100,000
Total	210	5,250,000	18	581,000	204	34,912,800	432	40,743,800	490	84,714,560
Island Possessions.										
Hawaii	2	50,000			2	550,000	4	600,000	4	610,000
Porto Rico					1	100,000	1	100,000		
Total	2	50,000			3	650,000	5	700,000	4	610,000
Grand total	2,764	69,100,000	432	14,220,500	1,825	237,442,800	5,021	320,763,300	7,397	1,046,012,580

The number and capital, by classes, of conversions, reorganizations, and primary organizations, are shown in the following table:

Summary, by classes, of national banks organized from Mar. 14, 1900, to Oct. 31, 1912.

Classification.	Conversions.		Reorganization.		Primary organization.		Total.	
	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital.
Capital less than $50,000	456	$12,078,000	953	$25,287,000	1,787	$45,955,500	3,196	$83,320,500
Capital $50,000 or over	317	46,687,800	575	81,815,000	933	108,940,000	1,825	237,442,800
Total	773	58,765,800	1,528	107,102,000	2,720	154,895,500	5,021	320,763,300

Number of national banks organized in each month from Mar. 14, 1900, to Oct. 31, 1912.

Months.	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912
	No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
January		36	40	34	36	45	45	40	32	28	28	12	16
February		31	28	50	35	39	41	42	36	20	29	13	14
March	6	35	41	56	42	50	41	50	39	22	37	39	19
April	46	30	50	51	46	42	43	46	34	26	26	28	15
May	66	54	50	47	42	49	45	52	33	24	21	20	22
June	95	40	42	58	43	48	42	55	21	44	40	21	14
July	46	41	38	43	22	37	32	40	37	28	19	13	16
August	44	27	42	36	38	44	33	39	20	32	12	15	15
September	20	23	38	31	32	35	31	46	14	24	27	15	20
October	25	27	33	57	43	36	41	38	18	22	22	8	15
November	21	32	36	20	36	23	27	19	21	23	12	11	
December	29	36	54	32	45	38	41	23	18	27	18	11	
Total	398	412	492	515	460	486	462	490	323	320	291	206	166

Number and classification of national banks organized during the year ended Oct. 31, 1912.

Months.	Conversions.		Reorganizations.		Primary organizations.		Total.		Bonds deposited.
	No.	Capital.	No.	Capital.	No.	Capital.	No.	Capital.	
November	7	$300,000	2	$150,000	2	$75,000	11	$525,000	$134,750
December	3	475,000	4	250,000	4	105,000	11	830,000	173,250
January	5	325,000	5	1,150,000	6	190,000	16	1,665,000	296,250
February	5	375,000	3	425,000	6	1,300,000	14	2,100,000	469,500
March	8	490,000	6	1,200,000	5	225,000	19	1,915,000	339,750
April	5	200,000	3	200,000	7	275,000	15	675,000	213,500
May	9	650,000	7	265,000	6	200,000	22	1,115,000	318,750
June	2	75,000	4	210,000	8	260,000	14	545,000	149,250
July	3	120,000	6	3,665,000	7	725,000	16	4,510,000	320,050
August	5	170,000	3	75,000	7	250,000	15	495,000	169,000
September	7	225,000	2	130,000	11	675,000	20	1,030,000	266,250
October	3	75,000	5	425,000	7	175,000	15	675,000	174,050
Total	62	3,480,000	50	8,145,000	76	4,455,000	188	16,080,000	3,024,350

The following statement shows the number of national banks in existence, together with their authorized capital, bonds on deposit to secure circulation, and circulation secured by bonds and by lawful money, on March 14, 1900, and on October 31, from 1909 to 1912:

	Mar. 14, 1900.	Oct. 31, 1909.	Oct. 31, 1910.	Oct. 31, 1911.	Oct. 31, 1912.
Number of banks	3,617	7,025	7,218	7,331	7,428
Authorized capital	$616,308,095	$964,621,925	$1,015,897,135	$1,032,632,135	$1,053,670,435
Bonds on deposit	244,611,570	679,545,740	694,926,070	714,170,320	730,257,280
Circulation, on bonds	216,374,795	678,344,963	691,335,845	711,099,938	727,169,316
Circulation, lawful money	38,027,935	25,595,793	33,538,463	28,065,375	22,179,543
Total circulation	254,402,730	703,940,756	724,874,308	739,165,313	749,348,859

EXTENSIONS AND EXPIRATIONS OF CHARTERS.

Under the law the corporate existence of national banks extends for a period of 20 years from the date of the execution of the organization certificate, and in the year ended October 31, last, 104 banks reached the termination of that period, and their charters were extended for an additional period of 20 years, in conformity with the act of July 12, 1882. During this same time the charters of 75 banks, which had been extended under the act of 1882, were extended for a further period of 20 years under the act of April 12, 1902. Extensions of charters under the act of 1882 have been granted to 3,188 banks, and under the act of 1902 to 1,141 banks. In 1913 the charters of 83 banks will expire for the first time, and 26 under their first extension. In the appendix to this report will be found a list of all banks interested in extension of their charters during the year ending October 31, 1913.

Extension of the charter or corporate existence of a national bank requires the written consent of shareholders representing at least two-thirds of the stock and the comptroller's approval of the action of the shareholders. Extension occasions no change in the title, charter number, or corporate rights of a bank.

The law provides that before the approving of the extension of charter the comptroller shall be satisfied that the bank is in a satisfactory condition, and to determine that question a special examination is made in every instance within 30 to 90 days of the date of

expiration of the prior charter. Under the law every bank the charter of which is extended is required to order a new plate or plates for the printing of circulation of a design materially different from that of the plates in prior use. The cost of these plates and expenses incident to special examination of a bank represent the total expense to the bank, so far as the Government is concerned, in connection with the extension of charter.

Under the act of 1863 the corporate existence of a number of banks was fixed by the articles of association at less than 20 years, and in consequence expired prior to the act of 1882 authorizing extension. Under the regulations of the department at that time banks of this character were required to formally liquidate, reorganize, and take a new charter, and necessarily a new charter number. By reason of the sentiment attaching to the original numbers, banks in that category have been permitted to resume their original numbers. A list of these banks will be found in the appendix to this report.

CHANGES OF TITLE AND LOCATION OF NATIONAL BANKS.

Under the law the comptroller may approve of the change of the corporate title of national banks, and also their removal to a point in the same State not more than 30 miles distant from the original location. Change of either character necessarily requires the ordering of new plates for the printing of circulation to conform to the change of corporate title. Changes of title and location necessitate affirmative action by shareholders representing at least two-thirds of the capital stock.

In the year just ended 17 changes have occurred, a list of the banks interested being shown in the following table:

No.	Title and location.	Date.
		1911.
5698	The National Bank of Lexington, N. C., to "The First National Bank of Lexington"	Nov. 4
		1912.
9662	The Citizens National Bank of Seattle, Wash., to "The Mercantile National Bank of Seattle"	Jan. 20
8358	The Farmers First National Bank of Fulton, Mo., to "The First National Bank of Fulton"	Jan. 23
1935	The National Bank of Greenville, S. C., to "The First National Bank of Greenville"	Jan. 25
10062	The Jenkins National Bank, Jenkins, Ky., to "The First National Bank of Jenkins"	Jan. 29
9871	The Farmers National Bank of Siloam Springs, Ark., to "The First National Bank of Siloam Springs"	Mar. 2
4740	The National Bank of Lakeport, N. H., to "The Lakeport National Bank of Laconia" (p. o. Lakeport, N. H.)	Apr. 26
4341	The Utah National Bank of Salt Lake City, Utah, to "The Utah State National Bank of Salt Lake City"	Apr. 30
2127	The State National Bank of Memphis, Tenn., to "The Central-State National Bank of Memphis"	May 1
9882	The Western Metropolis National Bank of San Francisco, Cal., to the "Merchants National Bank of San Francisco"	June 1
5777	The First National Bank of Beaver Springs at Adamsburg, Pa., to "The First National Bank of Beaver Springs"	June 13
8825	The Groves National Bank of Hollis, Okla., to "The City National Bank of Hollis"	June 17
345	Irving National Exchange Bank of New York, N. Y., to "Irving National Bank, New York"	July 20
1169	The Fourth National Bank of Nashville, Tenn., to the "Fourth and First National Bank of Nashville"	Aug. 7
643	The Atlantic National Bank of Boston, Mass., to "The Fourth-Atlantic National Bank of Boston"	Aug. 30
9663	The Manchester National Bank, Manchester, Va., to "The Manchester National Bank of Richmond"	Oct. 25
	Change of location and title.	
5767	The First National Bank of Weldon, N. C., to "The First National Bank of Roanoke Rapids," N. C	July 1

STATUS OF BANK WHEN PLACE IN WHICH ORGANIZED HAS BEEN ANNEXED TO ADJACENT CITY.

The national-bank act fixes the amount of capital required to organize a national bank, making it dependent upon the population of the place in which said bank is organized. The act also requires the organization certificate to state specifically the place in which the banking business is to be carried on.

In the course of time, as the larger cities grow, annexation is made of suburban villages which frequently contain national banks organized with the capital required for a population of such village. A question has arisen several times as to whether a bank chartered in this suburban village which has been annexed to the larger city has or has not a right to remove into the older or original city. The comptroller has held that they can not do so, being restricted to the place named in the organization certificate, and has refused to permit them to remove beyond the original limits of that place unless they increase their capital to the amount required for the organization of a national bank in the larger place and also comply with all other conditions required of banks in such cities.

The First National Bank of Capitol Hill was organized in the village of Capitol Hill, adjacent to Oklahoma City. Some time after Capitol Hill had been annexed to Oklahoma City the First National Bank removed from its old location into the business section of Okalahoma City. They were at once notified by the comptroller to return to their former location or to increase their capital stock from its present amount of $25,000, the amount required for a bank in the village of Capitol Hill, to $200,000, the amount required for the organization of a bank in Oklahoma City, and also to comply with all the requirements of a reserve city bank.

The First National Bank of Capitol Hill declined to increase their capital stock or to return to the former location in Capitol Hill, and the comptroller thereupon referred the matter to the Solicitor of the Treasury. The attorneys for the First National Bank of Capitol Hill were present at a hearing in the solicitor's office, and by agreement a suit was instituted in the United States District Court for the Second District of Oklahoma in the name of the Comptroller of the Currency, against the First National Bank of Capitol Hill, asking for the forfeiture of its charter.

To the petition in this case the defendant bank demurred, and on October 15, 1912, Judge Cottrell, of the United States district court, overruled the demurrer and held that the petition stated a good cause of action for the forfeiture of the charter of the bank.

The position taken by the comptroller was that as the organization certificate stated the place where a bank's operations are to be carried on, designating the State, Territory, or district, and the particular county, city, town, or village, and that the law required that the usual business should be transacted at an office located in the place specified in its organization certificate, the bank could not change its place of operations to any other place, except with the approval of the Comptroller of the Currency. It was therefore claimed that this bank could not remove from its location within the limits of Capitol Hill over into Oklahoma City and outside the limits of the old village of Capitol Hill without the consent of the comptroller and meeting the other requirements of the statute; that such removal would be

contrary to the spirit and intent of the national banking acts, and that said act requires certain capital stock in places of certain population.

It is understood that the First National Bank of Capitol Hill intends to ask for a stay of execution and will take the case up on error to the United States circuit court of appeals.

VOLUNTARY LIQUIDATIONS OF NATIONAL BANKS.

Eighty-three national banks, with capital aggregating $21,605,250, were placed in voluntary liquidation during the past year, of which 14, with capital of $3,610,250, were absorbed by other national banks; 21, with capital of $11,475,000, consolidated with other national banks; and 10, with capital of $1,215,000, were absorbed by State banks and trust companies. Banks to the number of 21, with capital of $2,405,000, liquidated to reorganize as State banks; 8, with capital of $2,500,000, liquidated to reorganize as national banks; and 3, with capital of $200,000, the corporate existence of which expired by limitation, were succeeded by new national banks, while 6, with capital of $200,000, went into liquidation to discontinue business.

A list of national banks placed in voluntary liquidation during the year, together with the names, where reported, of succeeding banks, will be found in the appendix.

When a national bank is placed in voluntary liquidation for the purpose of discontinuing business and not to consolidate with any other bank, a liquidating agent is elected by the shareholders, who is required to submit quarterly reports to the comptroller covering the amount of assets not liquidated and liabilities to depositors and other creditors at close of the quarter. Banks in voluntary liquidation are also subject to periodical examinations until such time as the claims of creditors are paid or otherwise satisfied. Neither reports nor examinations are required, however, where banks liquidate for the purpose of consolidating with other institutions whereby the liabilities are assumed by the bank with which consolidation is effected.

INSOLVENT NATIONAL BANKS.

Receivers were appointed for eight national banks during the year ended October 31, 1912, the aggregate capital being $1,100,000. In the accompanying table will be found a list of the banks, with date of authority to begin business, date of appointment of receiver, capital stock, and circulation issued, redeemed, and outstanding.

Name and location of bank.	Charter No.	Date of authority to commence business.	Date of appointment of receiver.	Capital stock.	Circulation.		
					Issued.	Redeemed.	Outstanding.
Washington National Bank, Washington, N. J.	5121	May 16, 1898	Nov. 17, 1911	$50,000	$25,000	$17,670	$7,330
Union National Bank, Columbus, Ohio	7584	Jan. 30, 1905	Dec. 7, 1911	750,000	100,000	37,900	62,100
Albion National Bank, Albion, Mich.	7552	Jan. 11, 1905	Jan. 4, 1912	50,000	20,000	8,290	11,710
First National Bank, New Berlin, N. Y.	151	Dec. 11, 1863	Apr. 15, 1912	100,000	100,000	48,790	51,210
First National Bank, Ambridge, Pa.	8459	Dec. 8, 1906	June 5, 1912	50,000	25,000	9,860	15,140
Second National Bank, Clarion, Pa.	3044	Sept. 12, 1883	June 21, 1912	50,000	49,000	13,665	35,335
First National Bank, Rowlesburg, W. Va.	9288	Dec. 9, 1908	July 31, 1912	25,000	10,000	3,250	6,750
First National Bank, New Roads, La.	7169	Mar. 15, 1904	Sept. 30, 1912	25,000	6,250	800	5,450
Total (8 banks)				1,100,000	335,250	140,225	195,025

From April 14, 1865, the date of the first failure of a national bank to October 31, 1912, receivers have been appointed for 525 nationa banks, of which, however, 25 were restored to solvency and authorized to resume business or liquidate, by reason of the restoration of capital, where necessary, or the placing of assets in a condition enabling the claims of all depositors and other creditors to be satisfactorily settled. Including the 25 banks in question, the affairs of 478 banks placed in charge of receivers have been settled, the assets taken charge of by receivers aggregating $305,908.459. The capital of these banks was $78,340,920. From the assets the collections were $152,346,371, and from assessments upon shareholders, $20,141,001, making total collections of $172,487,372. The proceeds of collections were disposed of as follows: Dividends, $122,060,521, on claims proved amounting to $160,201,795; loans paid and other disbursements, $34,812,040; legal expenses, $4,567,045; receivers' salaries and all other expenses, $8,128,561; balance in the hands of receivers or the comptroller, $27,796; returned to shareholders in cash, $2,891,409. Assessments levied upon shareholders to make good deficiency in assets amounted to $42,065,290. The outstanding circulation of the banks at date of failure was $23,506,707, secured by bonds on deposit with the Treasury of face value of $25,630,400. These bonds were sold and realized $26,590,545. The difference between the amount realized from these bonds and the circulation secured thereby was added to the general fund for the liquidation of liabilities to other creditors.

There are still in the charge of receivers 47 insolvent banks, the face value of the assets of these trusts being $45,238,913, and from which there has been collected $23,883,880. The claims proved and filed with the receivers amount to $25,917,314, on which dividends have been paid to the amount of $18,353,606.

In view of the indeterminate value of assets of insolvent banks still in charge of receivers, authentic data relative to the settlement of the affairs of the insolvent national banks are properly restricted to the trusts that have been fully settled. Computations based upon the figures relating to trusts closed indicate that creditors have received on claims proved, dividends at an average rate of 76.19 per cent, but including offsets allowed, loans paid, and other disbursements, with dividends, creditors received on an average 82.61 per cent. Expenses of administration of these 478 trusts, represented by receivers' salaries, legal, and other incidental expenses, amounted to $12,695,606, or 4.14 per cent of the nominal value of the assets and 7.36 per cent of the total collections from assets and shareholders. On an average shareholders were assessed 58.5 per cent on their holdings, the collections averaging 47.8 per cent of the assessments. In the current year 35 dividends were paid to the creditors of 26 insolvent banks, the total disbursements being $2,851,248.47.

In the following table is summarized the condition of all insolvent national banks, the condition of the closed and active receiverships being shown separately.

Summary of reports of receivers of insolvent national banks, 1865 to Oct. 31, 1912.

Assets, etc.	Closed receiverships, 478.[1]	Active receiverships, 47.	Total, 525.
Total assets taken charge of by receivers	$305,908,459	$45,238,913	$351,147,372
Disposition of assets:			
Offsets allowed and settled	24,343,265	3,583,291	27,926,556
Loss on assets, compounded or sold under order of court	111,187,331	5,775,075	116,962,406
Nominal value of assets returned to stockholders	14,045,068		14,045,068
Nominal value of remaining assets	3,986,424	11,996,667	15,983,091
Collected from assets	152,346,371	23,883,880	176,230,251
Total	305,908,459	45,238,913	351,147,372
Collected from assets as above	152,346,371	23,883,880	176,230,251
Collected from assessments upon shareholders	20,141,001	2,062,446	22,203,447
Total collections	172,487,372	25,946,326	198,433,698
Disposition of collections:			
Loans paid and other disbursements	34,812,040	4,814,028	39,626,068
Dividends paid	122,060,521	18,353,606	140,414,127
Legal expenses	4,567,045	571,258	5,138,303
Receiver's salary and all other expenses	8,128,561	931,899	9,060,460
Balance in hands of comptroller or receivers	27,796	819,023	846,819
Amount returned to shareholders in cash	2,891,409	456,512	3,347,921
Total	172,487,372	25,946,326	198,433,698
Capital stock at date of failure	[2] 6,460,000 71,880,920	7,405,000	85,745,920
Bonds at failure	25,630,400	3,054,250	28,684,650
Amount realized from sale of bonds	26,590,545	2,074,302	28,664,847
Circulation outstanding at failure	23,506,707	3,387,215	26,893,922
Amount of assessment upon shareholders	42,065,290	4,195,950	46,261,240
Claims proved	160,201,795	25,917,314	186,119,109

[1] Includes 25 banks restored to solvency. [2] Capital stock of 25 banks restored to solvency.

The affairs of 12 insolvent banks were closed during the year ended October 31, 1912, and in the accompanying table will be found information relative to the capital, date of appointment of receiver, and per cent of dividends paid to creditors.

Title.	Location.	Date receiver appointed.	Capital.	Per cent dividends paid to creditors.
Berlin National Bank	Berlin, Wis.	Nov. 17, 1904	$50,000	70.00
American National Bank	Boston, Mass.	Nov. 27, 1905	200,000	100.00
Elmira National Bank	Elmira, N. Y.	May 26, 1893	200,000	69.50
Fredonia National Bank	Fredonia, N. Y.	June 19, 1905	100,000	70.25
First National Bank	Ladysmith, Wis.	June 2, 1905	25,000	75.00
First National Bank	Lexington, Okla.	May 24, 1905	25,000	22.50
Fort Dallas National Bank	Miami, Fla.	July 5, 1907	100,000	41.50
Jewelers National Bank	North Attleboro, Mass.	Dec. 20, 1907	100,000	[1] 100.00
First National Bank	Ramona, Okla.	May 2, 1908	25,000	100.00
First National Bank	Savoy, Tex.	June 30, 1909	25,000	56.00
Woods National Bank	San Antonio, Tex.	Nov. 9, 1907	200,000	97.50
Spring Valley National Bank	Spring Valley, Ill.	July 5, 1905	50,000	41.25

[1] And interest in full

REPORTS OF CONDITION OF BANKS IN THE UNITED STATES.

Under the provisions of section 333 of the Revised Statutes of the United States, the Comptroller of the Currency is required to incorporate in his annual report to Congress a statement exhibiting under appropriate heads the resources and liabilities and condition of the banks, banking companies, and savings banks organized under the laws of the several States and Territories, the statute providing that the information shall be obtained from reports made to legislatures or officers of the different States and Territories, or from such authentic sources as may be available.

Since 1908 the annual statements received from banks outside of the national system have conformed in general as to details of assets

and liabilities with the reports made by national banks. Individual statements for a date concurrent with the June call on national banks, beginning with 1909, have been furnished by the State and private banks through the courtesy and assistance of the State bank superintendents. Prior to 1909 statements for State banks were furnished to the comptroller for varying dates, and there was no uniformity in the form of the reports, many valuable details, such as the classification of cash, bonds, and deposits, being wanting. It is due to the courteous cooperation of the heads of the banking departments of the various States that it is possible now for the comptroller to present such complete and satisfactory statistics relative to practically all the banks of the country.

The statements used in the compilations are of date June 14, 1912, with the exception of State banks for Kentucky, May 18; Georgia, May 29; Tennessee, June 29; Alaska and the island possessions, June 30; the mutual savings banks of Maryland, June 29. With these exceptions the reports are uniform as to date and form.

The banks furnishing statements for use in connection with this report number 25,195, being 803 more than reported last year, and include 7,372 national banks, 13,381 State banks, 1,922 mutual and stock savings banks, 1,110 private banks, and 1,410 loan and trust companies.

Abstracts of reports of condition for each class of banks, arranged by States, will be found in the appendix. The summary referred to follows.

Summary of reports of condition from 25,195 banks in the United States and island possessions (including national, State, savings, and private banks and loan and trust companies), showing their condition at the close of business June 14, 1912.

RESOURCES.

Loans and discounts:		
Secured by real estate (including mortgages owned)	$3,301,485,759.93	
Secured by collateral other than real estate	4,239,942,380.07	
All other loans	6,350,722,499.00	
Overdrafts	61,455,604.59	
		$13,953,606,243.59
Bonds, securities, etc., including premiums thereon:		
United States bonds	823,266,866.97	
State, county, and municipal bonds	1,273,554,050.84	
Railroad bonds	1,631,544,479.26	
Bonds of other public-service corporations (including street and interurban railway bonds)	603,542,601.59	
Other bonds, stocks, warrants, etc	1,026,975,383.45	
		5,358,883,382.11
Banking house, furniture and fixtures		550,326,884.44
Other real estate owned		106,972,775.92
Due from banks		2,847,992,843.93
Checks and other cash items		55,236,223.74
Exchanges for clearing house		374,865,032.08
Actual cash on hand:		
Gold coin	238,389,386.74	
Gold certificates	[1] 643,547,090.00	
Silver dollars	22,957,395.00	
Silver certificates	194,374,169.00	
Subsidiary and minor coins	37,738,008.29	
Legal-tender notes	253,122,053.00	
National-bank notes	108,281,687.00	
Cash not classified	74,543,690.40	
		1,572,953,479.43
Other resources		165,805,908.94
Total resources		24,986,642,774.18

LIABILITIES.

Capital stock paid in	$2,010,843,505.70
Surplus	1,584,981,106.44
Undivided profits	581,178,042.47
National-bank circulation	708,690,593.00
Due to banks	2,632,635,075.58
Dividends unpaid	3,639,127.75

[1] Includes $80,479,000 clearing house certificates.

Individual deposits subject to check without notice	$8,323,485,623.53	
Saving deposits or deposits in interest or savings department	6,496,192,707.60	
Certificates of deposit	1,952,784,093.94	
Certified checks	135,241,263.20	
Cashier's checks outstanding	116,363,918.62	
		$17,024,067,606.89
United States deposits		58,945,980.66
Notes and bills rediscounted		21,836,346.24
Bills payable, including certificates of deposit representing money borrowed		127,778,722.66
Other liabilities		232,046,666.79
Total liabilities		24,986,642,774.18

The foregoing summary of reports of condition shows resources aggregating $24,986,642,774. Loans and discounts aggregated $13,953,606,243 against $13,046,389,844 in 1911; bonds, securities, etc., $5,358,883,382 against $5,051,856,404; cash in bank, $1,572,953,479 against $1,554,147,169; capital, $2,010,843,505 against $1,952,411,085; individual deposits, $17,024,067,606 against $15,906,274,710; surplus and undivided profits, $2,166,159,148 as against $2,065,574,839. The increase in these items during the year is as follows: Loans and discounts, $907,216,399; bonds, securities, etc., $307,026,978; cash in bank, $18,806,310; capital, $58,432,420; surplus and undivided profits, $100,584,309; and individual deposits, $1,117,792,896.

The percentage of increase for the principal items of resources and liabilities is as follows: Loans and discounts, 6.95; bonds, securities, etc., 6.08; cash, 1.21; capital, 2.99; surplus and undivided profits, 4.87; individual deposits, 7.02; and aggregate liabilities, 5.78.

The following comparative statement shows the classification of resources and liabilities of national and other reporting banks for each year from 1908 to 1912, inclusive:

Aggregate resources and liabilities of national and other reporting banks on or about June 30, 1908 to 1912.

Classification.	1908	1909	1910	1911	1912
	21,346 banks.	22,491 banks.	23,095 banks.	24,392 banks.	25,195 banks.
RESOURCES.					
Loans on real estate	$1,801,751,913.00	[1] $2,505,977,970.46	[1] $2,696,433,655.30	[1] $3,023,747,576.34	[1] $3,301,485,759.93
Loans on other collateral security	3,012,911,466.00	3,975,993,315.69	4,115,829,707.08	4,123,052,705.66	4,239,942,380.07
Other loans and discounts	5,565,468,763.59	4,821,546,812.25	5,647,164,421.40	5,835,854,369.03	6,350,722,499.00
Overdrafts	57,860,155.68	69,699,592.98	62,381,193.45	63,735,193.87	61,455,604.59
United States bonds	750,200,706.16	792,787,711.29	784,592,463.97	773,455,177.84	823,266,866.97
State, county, and municipal bonds	[2] 861,009,108.05	1,091,541,455.19	1,116,245,096.69	1,200,898,075.21	1,273,554,050.84
Railroad bonds and stocks	1,158,444,501.60	1,560,006,360.83	1,464,842,032.51	1,602,130,358.08	1,631,544,479.26
Bonds of other public-service corporations		466,526,687.08	478,045,935.46	550,192,266.65	603,542,601.59
Bank stocks	29,460,847.00				
Other stocks, bonds, etc	1,646,826,333.23	703,580,001.88	979,644,571.67	925,180,526.51	1,026,975,383.45
Due from other banks and bankers	2,236,244,596.94	2,562,071,702.68	2,393,008,260.76	2,788,772,572.47	2,847,992,843.93
Real estate, furniture, etc	494,998,124.33	544,035,541.89	574,231,671.01	616,693,997.78	657,299,660.36
Checks and other cash items	350,903,174.39	437,392,578.11	620,469,182.00	422,688,514.06	430,101,255.82
Cash on hand	1,368,329,683.43	1,452,014,676.34	1,423,808,814.37	1,554,147,169.28	1,572,953,479.43
Other resources	249,001,019.69	111,380,014.05	193,623,517.10	150,534,879.89	165,805,908.94
Total	19,583,410,393.09	21,095,054,420.72	22,450,320,522.77	23,631,083,382.67	24,986,642,774.18

[1] Includes mortgages owned. [2] Includes bonds of other corporations for national banks.

Aggregate resources and liabilities of national and other reporting banks on or about June 30, 1908 to 1912—Continued.

Classification.	1908	1909	1910	1911	1912
	21,346 banks.	22,491 banks.	23,095 banks.	24,292 banks.	25,195 banks.
LIABILITIES.					
Capital stock	$1,757,159,203.00	$1,800,036,368.00	$1,879,943,887.99	$1,952,411,085.56	$2,010,843,505.70
Surplus fund	1,401,570,455.80	1,326,090,642.50	1,547,917,181.08	1,512,083,859.93	1,584,981,106.44
Other undivided profits	359,942,627.85	508,534,786.43	404,649,006.90	553,490,979.77	581,178,042.47
Circulation (national banks)	613,663,963.00	636,367,526.00	675,632,565.00	681,740,513.00	708,690,593.00
Dividends unpaid	4,034,846.39	3,310,944.76	20,856,304.16	5,689,184.23	3,639,127.75
Individual deposits	12,784,511,169.33	14,035,523,165.04	15,283,396,254.35	15,906,274,710.27	17,024,067,606.89
United States deposits	130,266,023.63	70,401,818.99	54,541,349.41	48,455,641.54	58,945,980.66
Due to other banks and bankers	2,198,050,204.00	2,484,103,895.37	2,225,380,795.62	2,621,054,947.82	2,632,635,075.58
Other liabilities	344,211,900.09	230,685,273.63	358,003,178.26	349,882,460.55	381,661,735.69
Total	19,583,410,393.09	21,095,054,420.72	22,450,320,522.77	23,631,083,382.67	24,986,642,774.18

The foregoing statistics show that the aggregate resources of the banks have increased from $19,583,410,393 in 1908 to $24,986,642,774 for the present year, a gain of $5,403,232,381, or over 27 per cent. These figures indicate an unprecedented growth in bank resources during the past four years, and far exceeds that for any like period in the country's history. The nearest approach to this increase is shown in the statistics for June 30, 1904, when the aggregate resources of all reporting banks were about $4,413,000,000 greater than the amount reported in 1900. Individual deposits in the banks during the last four years increased from $12,784,511,169 to $17,024,067,606, the increase being $4,239,556,437, or over 33 per cent. The next largest increase shown was for the four years from June, 1904, to June, 1908, when the increase in round amount was $2,784,000,000, or 27 per cent. From June, 1908, to June, 1912, loans and discounts increased by $3,515,600,000, or 33 per cent, the next highest increase being $2,456,000,000, or 30 per cent, during the prior four-year period.

For the purpose of comparison, the following shows the number of reporting banks, aggregate loans, resources, capital, and deposits for the fiscal years 1908 to 1912, inclusive:

[In millions of dollars.]

Year.	Number of banks.	Loans.	Resources.	Capital.	Individual deposits.
1908	21,346	$10,437.9	$19,583.4	$1,757.1	$12,784.5
1909	22,491	11,393.1	21,095.0	1,800.0	14,035.5
1910	23,095	12,521.7	22,450.3	1,879.9	15,283.3
1911	24,392	13,046.4	23,631.0	1,952.4	15,906.3
1912	25,195	13,953.6	24,986.6	2,010.8	17,024.0

Statements in detail relative to loans and discounts, bonds, securities, etc., cash in bank, and individual deposits appear hereinafter, but there is submitted herewith a condensed summary of the returns from national and other banks for June 14, 1912, and June 7, 1911, the increase in the various items being shown separately.

Items.	1912			1911	Increase 1912 over 1911 (803 banks).
	7,372 national banks.	17,823 State, etc., banks.	Total 25,195 banks.	Total 24,392 banks.	
	Millions.	*Millions.*	*Millions.*	*Millions.*	*Millions.*
Loans and discounts	$5,973.7	$7,979.9	$13,953.6	$13,046.4	$907.2
United States bonds and all other bonds and securities	1,861.3	3,497.6	5,358.9	5,051.9	307.0
Cash	996.1	576.8	1,572.9	1,554.2	18.7
Aggregate resources	10,861.7	14,124.9	24,986.6	23,631.0	1,355.6
Capital	1,033.5	977.3	2,010.8	1,952.4	58.4
Surplus and undivided profits	950.8	1,215.3	2,166.1	2,065.6	100.5
Deposits (individual)	5,825.4	11,198.6	17,024.0	15,906.3	1,117.7

GROWTH OF BANKING IN THE UNITED STATES.

Information relating to banking in the earliest days of the country is meager, but some interesting data gathered from reliable sources are published in the annual reports of the Comptroller. In the appendix is a table which gives the number of colonial and State banks together with the principal items of resources and liabilities in the years indicated from 1784 to 1833. In 1784 the three banks from which reports have been compiled had a capital of about $2,100,000, circulation $2,000,000, and specie $10,000,000. In 1800 reports from 28 banks showed capital of $21,300,000, circulation $10,500,000, and specie $17,500,000. In 1820 there were 307 banks with capital of $102,100,000, circulation of $40,600,000, deposits $31,200,000, and specie $16,700,000. In 1830, 329 banks had $110,100,000 capital, $48,400,000 circulation, $39,500,000 deposits, $14,500,000 specie, and $159,800,000 in loans.

A statement of the resources and liabilities of the banks of the country in detail from 1834 to 1863 will also be found in the appendix. It appears from the table in question that in 1834 there were 506 State banks in the country, with capital of more than $200,000,000, circulation of $94,800,000, and deposits of $75,600,000. In 1840 the number of banks had increased to 901, with capital of $358,400,000, circulation $106,900,000, and deposits $75,600,000. In 1850 reports show only 824 banks, with capital of $217,300,000, circulation $131,300,000, and deposits $109,500,000. In 1862, the year prior to the inauguration of the national banking system, there appears to have been 1,492 banks in operation; the capital of these banks being $418,100,000, circulation $183,700,000, and deposits $296,300,000; the loans aggregated $646,600,000, investments in stocks $99,000,000, specie on hand $102,100,000, specie funds $27,800,000, and notes of other banks held $25,200,000.

The following condensed statement gives the principal items of resources and liabilities of national, State, savings, private banks, and loan and trust companies from 1863 to 1912, and reveals the growth of banking in this country for the past 50 years.

Principal items of resources and liabilities of State, savings, and private banks, loan and trust companies, and national banks, from 1863 to 1912.

[From 1863 to 1872, inclusive, data from various sources; from 1873 compiled from reports obtained by the Comptroller of the Currency.]

[Amounts in millions of dollars.]

Year.	Number of banks reporting.	Loans and discounts (including overdrafts).	Bonds, stocks, etc.	Due from banks and bankers.	Specie.	Paper currency.[1]	Total cash in bank.	Capital.	Surplus and profits.	Circulation.[2]	United States deposits.[3]	Individual deposits.	Due to banks.	Total assets.
1863	1,466	$648.6	$180.5	$96.9	$46.1	.....	[4] $205.5	$405.0	.....	$238.7	.....	$393.7	$100.5	$1,191.7
1864	[5] 1,089	.....	.....	.....	50.7	.....	.....	311.5	.....	163.3	.....	.....	.....	.....
	[6] 467	70.7	93.4	33.3	.....	.....	47.6	75.2	$4.2	189.1	.....	119.4	27.4	252.3
1865	1,960	362.4	404.3	103.0	9.4	$190.0	199.4	397.0	54.5	131.5	$58.0	641.0	157.8	1,126.5
1866	2,267	550.4	465.2	110.7	12.6	219.3	231.9	480.8	79.4	267.8	39.1	815.8	122.4	1,476.4
1867	2,279	588.5	443.1	100.0	11.1	194.5	205.6	483.8	93.9	291.8	33.3	876.6	112.5	1,494.1
1868	2,293	655.7	440.5	123.1	20.8	179.9	200.7	486.4	109.4	294.9	28.3	968.6	140.7	1,572.2
1869	2,354	686.3	414.6	107.6	18.5	144.0	162.5	489.7	126.0	292.7	12.8	1,032.0	129.0	1,564.2
1870	2,457	719.3	406.1	121.2	31.1	156.6	187.7	513.7	132.7	291.8	13.2	1,051.3	148.5	1,510.7
1871	2,796	789.4	419.9	143.8	19.9	174.1	194.0	561.7	143.1	315.5	11.1	1,251.6	176.4	1,730.6
1872	3,066	871.5	431.2	144.0	24.3	153.3	177.6	592.6	155.4	327.1	12.4	1,353.8	172.7	1,770.8
1873	[7] 1,968	1,439.9	713.2	167.1	[8] 27.9	.....	218.2	532.9	215.6	340.2	15.1	1,421.2	178.6	2,731.3
1874	[7] 1,893	1,564.5	723.2	193.6	[8] 22.3	.....	252.2	550.3	199.9	338.7	10.6	1,526.5	232.5	2,890.4
1875	3,336	1,748.1	793.1	195.0	[8] 19.0	.....	238.7	592.6	254.2	318.1	10.2	1,787.0	194.7	3,204.6
1876	3,448	1,727.1	807.3	198.2	[8] 25.4	.....	226.4	602.3	261.6	294.8	11.1	1,778.6	183.3	3,183.1
1877	3,384	1,720.9	841.2	184.6	[8] 21.3	.....	230.5	614.2	260.5	290.4	10.9	1,813.6	170.1	3,204.1
1878	3,229	1,561.2	865.9	183.2	[8] 29.7	.....	214.6	587.7	237.7	300.4	25.6	1,717.4	161.7	3,080.6
1879	3,335	1,507.4	1,032.9	204.0	[8] 42.7	.....	216.3	580.4	246.1	307.7	252.1	1,694.2	187.9	3,212.6
1880	3,355	1,662.1	900.6	248.9	[8] 100.2	.....	285.5	565.2	260.2	318.4	10.7	1,951.6	239.6	3,399.0
1881	3,427	1,901.9	500.9	346.1	[8] 129.5	.....	295.0	572.3	292.0	312.5	12.2	2,296.8	314.7	3,869.1
1882	3,572	2,050.3	1,049.1	307.3	[8] 112.4	.....	287.1	590.6	310.1	309.2	12.6	2,460.1	279.0	4,031.1
1883	3,835	2,133.6	951.2	392.8	[8] 116.2	.....	321.0	625.6	347.8	312.2	13.9	2,568.4	288.2	4,208.0
1884	4,111	2,260.7	1,030.4	294.1	[8] 110.2	.....	321.2	656.4	379.6	295.3	14.2	2,566.4	227.0	4,221.3
1885	4,350	2,272.3	952.0	432.9	[8] 179.0	.....	414.3	678.0	362.0	269.2	14.0	2,734.3	293.0	4,426.9
1886	4,378	2,456.7	1,031.1	349.8	[8] 152.2	.....	375.5	686.7	393.8	238.0	17.1	2,812.0	308.9	4,521.5
1887	6,179	2,944.9	999.9	632.1	[8] 165.1	.....	432.8	806.8	460.2	166.8	23.2	3,308.2	350.1	5,203.7
1888	6,647	3,161.1	1,112.1	439.1	226.4	219.7	446.1	853.7	493.7	155.5	58.4	3,422.7	366.1	5,470.4
1889	7,203	3,475.2	1,111.9	513.7	[9] 221.5	277.6	499.1	893.3	531.9	129.0	46.7	3,778.1	434.6	5,940.9
1890	7,999	3,842.1	1,158.0	531.3	221.9	256.4	478.3	968.7	584.0	126.5	30.6	4,062.5	432.3	6,343.0
1891	8,641	3,965.9	1,042.5	652.6	217.3	261.8	479.1	1,029.7	619.2	124.0	25.9	4,196.8	415.7	6,562.1

[1] Includes cash not classified.
[2] Includes State bank circulation.
[3] Includes deposits of United States disbursing officers.
[4] Specie funds and notes of other banks.
[5] From Homan's Banker's Almanac.
[6] National banks.
[7] Number of national banks only; number of State and savings banks not reported.
[8] Specie in national banks; incomplete for State banks.
[9] Includes coin certificates from 1889; specie for 1902 partially estimated.

Principal items of resources and liabilities of State, savings, and private banks, loan and trust companies, and national banks, from 1863 to 1912—Con.

[Amounts in millions of dollars.]

Year.	Number of banks reporting.	Loans and discounts (including overdrafts).	Bonds, stocks, etc.	Due from banks and bankers.	Specie.	Paper currency.	Total cash in bank.	Capital.	Surplus and profits.	Circulation.	United States deposits.	Individual deposits.	Due to banks.	Total assets.
1892	9,338	$4,336.6	$1,269.4	$684.3	$262.2	$324.2	$586.4	$1,071.1	$650.3	$141.2	$14.2	$4,664.9	$464.9	$7,245.3
1893	9,492	4,368.6	1,354.1	549.2	210.9	305.0	515.9	1,091.8	689.3	155.1	13.7	4,627.3	419.9	7,192.3
1894	9,508	4,085.0	1,445.3	705.1	283.4	405.5	688.9	1,069.8	682.4	171.8	14.1	4,651.2	599.1	7,290.6
1895	9,818	4,268.8	1,565.2	714.4	246.3	384.8	631.1	1,060.3	699.3	178.8	13.2	4,921.3	600.5	7,609.6
1896	9,469	4,251.1	1,674.4	645.0	251.2	280.6	531.8	1,051.9	694.4	199.2	15.4	4,945.1	521.7	7,553.9
1897	9,457	4,216.0	1,732.3	781.4	297.7	330.5	628.2	1,012.3	712.7	196.6	16.4	5,094.7	673.4	7,822.1
1898	9,485	4,652.2	1,859.7	924.9	402.2	285.6	687.8	992.0	732.7	189.9	52.9	5,688.2	809.8	8,609.0
1899	9,732	5,177.6	2,179.0	1,203.1	449.1	274.2	723.3	973.6	761.1	199.4	76.3	6,768.7	1,046.4	9,904.9
1900	10,382	5,657.5	2,398.3	1,272.8	449.7	300.2	749.9	1,024.7	882.2	265.3	98.9	7,238.9	1,172.5	10,785.9
1901	11,406	6,425.2	2,821.2	1,448.0	479.0	328.5	807.5	1,076.1	955.6	319.0	99.1	8,460.6	1,333.0	12,357.5
1902	12,424	7,189.0	3,039.2	1,561.2	541.0	307.1	848.1	1,201.6	1,096.9	309.4	124.0	9,104.7	1,393.2	13,363.9
1903	13,684	7,738.9	3,400.1	1,570.6	478.2	379.0	857.2	1,321.9	1,273.4	359.2	147.3	9,553.6	1,475.9	14,303.1
1904	14,850	7,982.0	3,654.2	1,842.9	612.2	378.4	990.6	1,392.5	1,360.9	399.6	110.3	10,000.5	1,752.2	15,198.8
1905	16,410	9,027.2	3,987.9	1,981.9	617.3	376.8	994.1	1,463.2	1,439.5	445.4	75.3	11,350.7	1,904.3	16,918.2
1906	17,905	9,893.7	4,073.5	2,029.2	633.0	383.4	1,016.4	1,565.3	1,558.9	510.9	89.9	12,215.8	1,899.0	18,147.6
1907	19,746	10,763.9	4,377.1	2,135.6	719.5	394.2	1,113.7	1,690.8	1,645.0	547.9	180.7	13,099.6	2,075.4	19,645.0
1908	21,346	10,438.0	4,445.9	2,236.2	860.5	507.8	1,368.3	1,757.2	1,761.5	613.7	130.3	12,784.5	2,198.0	19,583.4
1909	22,491	11,373.2	4,614.4	2,562.0	1,044.6	407.4	1,452.0	1,800.0	1,834.6	636.3	70.4	14,035.5	2,484.1	21,095.0
1910	23,095	12,521.8	4,723.4	2,393.0	1,009.6	414.2	1,423.8	1,880.0	1,952.6	675.6	54.5	15,283.4	2,225.3	22,450.3
1911	24,392	13,046.4	5,051.9	2,788.8	1,110.7	443.4	1,554.2	1,952.4	2,065.6	681.7	48.5	15,906.3	2,621.1	23,631.1
1912	25,195	13,953.6	5,358.9	2,848.0	1,137.0	435.9	1,572.9	2,010.8	2,166.1	708.7	58.9	17,024.0	2,632.6	24,986.6

NOTE.—Since 1873 the Comptroller of the Currency has collected and published statistics of State banks, but complete data for compiling these statistics for a number of years thereafter were available only for those States in which the banks were required to report to some State official. For recent years the statistics are practically complete.

GROWTH OF BANKING IN RECENT YEARS.

The table following shows the growth of banks in the United States, including island possessions, as indicated by the number of banks, capital stock, and individual deposits for four-year periods from 1900, the number of nonreporting banks, their capital, and deposits being estimated from data obtained from reliable sources.

Bank.	Number.	Capital.		Individual deposits.	
		Amount.	Per cent.	Amount.	Per cent.
1900.					
National	3,732	$621,536,461	54.00	$2,458,092,758	31.97
State, etc	6,650	403,192,214	46.00	4,780,893,692	68.03
Reporting capital only	3,595	126,000,000		450,000,000	
Total	13,977	1,150,728,675	100.00	7,688,986,450	100.00
1904.					
National	5,331	767,378,148	52.06	3,312,439,841	31.70
State, etc	9,519	625,116,824	47.94	6,688,107,157	68.30
Nonreporting	3,994	81,409,702		447,998,992	
Total	18,844	1,473,904,674	100.00	10,448,545,990	100.00
1908.					
National	6,824	919,100,850	50.14	4,374,551,208	32.97
State, etc	14,522	838,058,353	49.86	8,409,959,961	67.03
Nonreporting	3,654	76,646,000		485,988,831	
Total	25,000	1,833,805,203	100.00	13,270,500,000	100.00
1911.					
National	7,277	1,019,633,152	50.17	5,477,991,156	33.27
State, etc	17,115	932,777,933	49.83	10,428,283,554	66.73
Nonreporting	4,159	80,000,000		560,000,000	
Total	28,551	2,032,411,085	100.00	16,466,274,710	100.00
1912.					
National	7,372	1,033,570,675	49.67	5,825,461,163	33.30
State, etc	17,823	977,272,830	50.33	11,198,606,443	66.70
Nonreporting	3,800	70,000,000		470,000,000	
Total	28,995	2,080,843,505	100.00	17,494,067,606	100.00

Since 1900 the number of banks in operation in the country has increased by over 107 per cent, and their volume of business, as indicated by their deposits, shows an increase of over 127 per cent. In that year the total number of banks in operation (data for nonreporting banks being estimated) was stated at 13,977, with capital of $1,150,728,675, and individual deposits, $7,688,986,450. The nonreporting banks in 1900 were estimated at 3,595, in 1904 at 3,994, in 1908 at 3,654, and in 1912 at 3,800.

For the current year (nonreporting banks being again estimated) the number has increased to 28,995, with aggregate capital of $2,080,843,505 and individual deposits, $17,494,067,606. In 1900, 3,732 national banks had 54 per cent of capital of all reporting banks and about 32 per cent of the individual deposits. In June, 1912, 7,372 national banks held 49.67 per cent of the capital stock of all banks and nearly 33⅓ per cent of all individual deposits. In 1900 the capital stock of national banks, in round amount, aggregated $621,000,000, and that of all other banks, $529,000,000; for the current year the capital of national banks aggregates $1,033,000,000, and that of all other reporting and nonreporting banks, $1,047,000,000. The figures show that national banks during the last 12 years have

increased their capital by 66 per cent, while that of all other banks increased 97 per cent; but the statistics further show that the national banks increased their volume of business, as measured by individual deposits, by a much larger percentage than did the other banks, the gain during this period being 137 per cent for national and 123 per cent for other banks.

BANKING POWER OF THE UNITED STATES.

The banking power of the United States in 1912, as represented by capital, surplus and other profits, deposits, and circulation, of national and other reporting banks, together with the estimated amount of funds of this character in nonreporting banks, is $22,548,706,835, against $21,334,456,790 in 1911, and $17,642,705,274 in 1908. The increase for the year 1912 was 5.69 per cent and for the four years ended June 14, 1912, over 27.8 per cent. Since 1900, when it was reported at $10,685,000,000, the banking power of the country has more than doubled, the increase being 111 per cent. The details are set forth in the following table:

Banking power of the United States.

	Number.	Capital.	Surplus and profits.	Deposits.	Circulation.	Total.
National banks	7,372	$1,033,570,676	$950,827,515	[1] $5,884,407,144	$708,690,593	$8,577,495,927
State, etc., banks	17,823	977,272,830	1,215,331,634	11,198,606,444	.....	13,391,210,908
Nonreporting banks	3,800	70,000,000	40,000,000	470,000,000	.....	580,000,000
	28,995	2,080,843,505	2,206,159,149	17,553,013,588	708,690,593	22,548,706,835

[1] Includes United States deposits.

* * * * * * *

CLASSIFICATION OF LOANS AND DISCOUNTS IN ALL BANKS.

Loans and discounts in the banks of the United States as shown by reports of condition for 1912, aggregate roundly, $13,953,600,000. Of this amount, $5,973,700,000 is in national banks and $7,979,900,000 in banks other than national. Of the total loans, the sum of $3,301,000,000 is reported as secured by real estate, and $4,239,000,000 by other collateral.

The classification of loans of banks other than national and of national banks compiled from reports as of June 14, 1912, is set forth in the following table:

Loans and discounts.

Classification.	Number of banks.	Secured by real estate (including mortgages owned).	Secured by collateral other than real estate.	All other loans.	Overdrafts.	Total.
		Millions.	*Millions.*	*Millions.*	*Millions.*	*Millions.*
State banks	13,381	$572.9	$564.0	$1,379.6	$32.8	$2,549.3
Mutual savings banks	630	1,707.8	135.9	76.6	.....	1,920.3
Stock savings banks	1,292	379.9	104.5	182.8	2.0	669.3
Loan and trust companies	1,410	526.5	1,280.0	900.3	4.4	2,711.2
Private banks	1,110	39.6	19.8	68.1	2.4	129.8
Total	17,823	3,226.7	2,104.2	2,607.4	41.6	7,979.9
National banks	7,372	74.8	2,135.7	3,743.3	19.8	5,973.7
Grand total	25,195	3,301.5	4,239.9	6,350.7	61.5	13,953.6

From the foregoing statement it appears that about 24 per cent of the total loans are secured by real estate or other liens on realty, the proportion of loans secured by real estate for each class of banks being as follows: 88 per cent for mutual savings banks, 56 per cent for stock savings banks, 30 per cent for private banks, 22 per cent for State banks, 19 per cent for loan and trust companies, and a little over 1¼ per cent for national banks.

INVESTMENTS OF ALL BANKS IN BONDS AND OTHER SECURITIES.

Investments in bonds, securities, etc., of all banks, as shown by reports for 1912, aggregate $5,358,800,000, as against $5,051,900,000 in 1911, the gain being nearly $307,000,000.

The classification by amounts and percentages of investments held by banks in 1911 and 1912 is as follows:

Classification.	1911		1912	
	Amount.	Per cent.	Amount.	Per cent.
	Millions.		*Millions.*	
United States bonds	$773.5	15.3	$823.3	15.4
State, county, and municipal bonds	1,200.9	23.8	1,273.5	23.8
Railroad bonds	1,602.1	31.7	1,631.6	30.4
Bonds of other public-service corporations	550.2	10.9	603.5	11.3
Other bonds, stocks, and securities	925.2	18.3	1,027.0	19.1
Total	5,051.9	100.0	5,358.9	100.0

From the foregoing it will be noted that 30.4 per cent of the investments of banks reporting in 1912 is in railroad bonds against 31.7 per cent in 1911; 11.3 per cent in bonds of other public-service corporations against 10.9 per cent in 1911; 15.4 per cent in United States bonds against 15.3 per cent in 1911. The percentage of State, county, and municipal bonds remains the same as in 1911, i. e., 23.8 per cent, while the unclassified bonds, stocks, securities, etc., is 19.1 per cent against 18.3 per cent in 1911.

In the following table is shown the amount of the various classes of bonds, stocks, and other securities held by the several classes of banks on June 14, 1912:

Classification of investments in bonds, etc., held by banks of the United States on June 14, 1912.

[Expressed in millions.]

Classification.	State banks.	Mutual savings banks.	Stock savings banks.	Private banks.	Loan and trust companies.	National banks.	All banks.
United States bonds	$4.4	$19.9	$9.1	$0.4	$6.0	[1] $783.5	$823.3
State, county, and municipal bonds	82.0	733.4	43.0	2.4	202.3	210.4	1,273.5
Railroad bonds	71.5	770.7	23.4	1.4	380.2	384.3	1,631.6
Bonds of other public-service corporations	53.6	110.6	32.9	2.0	208.7	195.7	603.5
Other bonds, stocks, etc	130.3	143.4	36.4	7.5	422.0	287.3	1,027.0
Total	341.8	1,778.0	144.8	13.7	1,219.2	1,861.2	5,358.9

[1] Includes premium.

From the foregoing table it appears that of the $823,300,000 United States bonds owned by the banks $783,500,000, including premium, are held by national and $39,800,000 by all other banks, $19,900,000 of the latter amount being owned by mutual savings banks. The largest proportion of the bond investments held by mutual savings banks is shown to consist of bonds of railroad and other public-service corporations, 49 per cent of the bonds held by mutual savings banks being of this character. Forty-eight per cent of the investments of loan and trust companies consists of this class of bonds, as also 38 per cent of investments of stock savings banks, 36 per cent of State-bank investments, 31 per cent of national-bank investments, and 24 per cent of private-bank investments. Forty-one per cent of the investments of mutual savings banks consists of State, county, and municipal bonds; the proportion of investments in this class of bonds by the other banks are 29 per cent for stock savings banks, 24 per cent for State banks, 16 per cent for loan and trust companies, 11 per cent for national banks, and less than 2 per cent for the private banks.

Of the total investments in bonds, stocks, etc., 33 per cent is held by mutual savings banks, 34 per cent by national banks, and 22 per cent by loan and trust companies, the balance, 11 per cent, being the combined holdings of State banks, stock savings banks, and private banks.

MONEY IN BANKS.

On June 7, 1911, the cash holdings of all reporting banks were $1,554,147,169.28, and on June 14, 1912, $1,572,953,479.43, being an increase during the year of $18,806,310.15. The reports show that during the year cash in national banks has decreased in the sum of $1,918,617.59, and that the cash in State banks has increased in the sum of $20,724,927.74. Of the total amount held by the banks on June 14, 1912, $996,000,000 was in national and $576,000,000 in other reporting banks. The proportion of cash to deposits held by national banks is, therefore, shown to be 17.10 per cent, that for all other commercial banks is 7.38 per cent, and including mutual saving bank 5.15 per cent.

The following table shows the amount of coin and other money held by all reporting banks.

Classification of cash in banks June 14, 1912.

Classification.	7,372 national banks.	17,823 State, etc., banks.	25,195 reporting banks.
Gold coin	$149,294,417.78	$89,094,968.96	$238,389,386.74
Gold certificates	356,602,380.00	206,465,716.00	563,068,096.00
Gold clearing-house certificates	80,479,000.00		80,479,000.00
Silver dollars	12,637,221.00	10,320,174.00	22,957,395.00
Silver certificates	138,569,628.00	55,804,541.00	194,374,169.00
Subsidiary and minor coin	22,555,692.68	15,182,315.61	37,738,008.29
Legal-tender notes	188,440,207.00	64,681,846.00	253,122,053.00
National-bank notes	47,564,277.00	60,717,410.00	108,281,687.00
Cash not classified		74,543,684.40	74,543,684.40
Total	996,142,823.46	576,810,655.97	1,572,953,479.43

DISTRIBUTION OF MONEY IN THE UNITED STATES.

In the following table is shown the distribution of money in the United States, giving the amount in the Treasury as assets, amount in reporting banks, and elsewhere, from 1892 to 1912, inclusive:

Year ended June 30—	Coin and other money in the United States.	Coin and other money in Treasury as assets.[1]		Coin and other money in reporting banks.[2]		Coin and other money not in Treasury or banks.			In circulation, exclusive of coin and other money in Treasury as assets.	
		Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.	Per capita.	Amount.	Per capita.
	Millions.	*Millions.*		*Millions.*		*Millions.*			*Millions.*	
1892	$1,752.2	$150.9	8.60	$586.4	33.48	$1,014.9	57.92	$15.50	$1,601.3	$24.60
1893	1,738.8	142.1	8.17	515.9	29.68	1,080.8	62.15	16.14	1,596.7	24.06
1894	1,805.5	144.2	7.99	688.9	38.17	972.4	53.84	14.21	1,661.3	24.56
1895	1,819.3	217.4	11.95	631.1	34.96	970.8	53.36	13.89	1,601.9	23.24
1896	1,799.9	293.5	16.31	531.8	29.55	974.6	54.14	13.65	1,506.4	21.44
1897	1,906.7	265.7	13.93	628.2	32.94	1,012.8	53.13	13.87	1,641.0	22.92
1898	2,073.5	235.7	11.37	687.7	33.17	1,150.1	55.46	15.43	1,837.8	25.19
1899	2,190.0	286.0	13.06	723.2	33.02	1,180.8	53.92	15.51	1,904.0	25.62
1900	2,339.7	284.6	12.16	749.9	32.05	1,305.2	55.79	17.11	2,055.1	26.93
1901	2,483.1	307.8	12.39	794.9	32.02	1,380.4	55.59	17.75	2,175.3	27.98
1902	2,563.2	313.9	12.24	837.9	32.69	1,411.4	55.07	17.90	2,249.3	28.43
1903	2,684.7	317.0	11.80	848.0	31.59	1,519.7	56.61	18.88	2,367.7	29.42
1904	2,803.5	284.3	10.14	982.9	35.06	1,536.3	54.80	18.77	2,519.2	30.77
1905	2,883.1	295.2	10.24	987.8	34.27	1,600.1	55.49	19.22	2,587.9	31.08
1906	3,069.9	333.3	10.86	1,010.7	32.92	1,725.9	56.22	20.39	2,736.6	32.32
1907	3,115.6	342.6	11.00	1,106.5	35.51	1,666.5	53.49	19.36	2,773.0	32.22
1908	3,378.8	340.8	10.08	1,362.9	40.34	1,675.1	49.58	19.15	3,038.0	34.72
1909	3,406.3	300.1	8.81	1,444.3	42.40	1,661.9	48.78	18.68	3,106.2	34.93
1910	3,419.5	317.2	9.27	1,414.6	41.37	1,687.7	49.36	18.68	3,102.3	34.33
1911	3,555.9	341.9	9.61	1,545.5	43.46	1,668.5	46.93	17.75	3,214.0	34.20
1912	3,648.8	364.3	9.98	1,563.8	42.86	1,720.7	47.16	17.98	3,284.5	34.34

[1] Public money in national-bank depositaries to the credit of the Treasurer of the United States not included.
[2] Money in banks of island possessions not included.

The general stock of money in the United States at the close of the fiscal year ended June 30, 1912, was $3,648,800,000. Of this amount $364,300,000, or 9.98 per cent, was in the Treasury as assets; $1,563,800,000, or 42.86 per cent, in reporting banks (excluding those of the island possessions); and $1,720,700,000, or 47.16 per cent, outside of the Treasury and banks—that is, in circulation among the people. The amount reported in circulation, exclusive of coin and other money in the Treasury as assets, is $3,284,500,000, or $34.34 per capita, being $70,500,000 more than the amount reported in 1911. Of this increase in circulation during the year $18,300,000 in June last was in the vaults and tills of the banks of the United States and $52,200,000 in circulation outside of banks.

INDIVIDUAL DEPOSITS IN ALL BANKS IN THE UNITED STATES.

Individual deposits in all reporting banks on or about June 30, 1908, aggregated $12,784,500,000, for the current year the deposits aggregate $17,024,000,000, being an increase for the four years of $4,239,500,000, or over 33 per cent. The increase for the current year over the amount reported in 1911 is $1,117,700,000, or 7 per cent. Of the aggregate individual deposits in all reporting

banks on June 14 last national banks held 34.2 per cent; savings banks, 26.1 per cent; loan and trust companies, 21.6 per cent; State banks, 17.2 per cent; and private banks, 0.9 per cent.

The following table shows the amount and per cent of individual deposits held by the several classes of banks in 1908, 1911, and 1912:

Classification.	1908		1911		1912	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
	Millions.		*Millions.*		*Millions.*	
State banks	$2,937.1	23.0	$2,777.6	17.5	$2,920.0	17.2
Savings banks	3,479.2	27.2	4,212.6	26.5	4,451.5	26.1
Private banks	126.7	1.0	142.3	.9	152.5	.9
Loan and trust companies	1,866.9	14.6	3,295.8	20.7	3,674.6	21.6
National banks	4,374.6	34.2	5,478.0	34.4	5,825.4	34.2
Total	12,784.5	100.0	15,906.3	100.0	17,024.0	100.0

The following table shows the distribution of individual deposits by geographical sections on or about June 30, 1908, on June 7, 1911, and June 14, 1912, together with the amount and percentage of increase for the four-year period and for the current year:

Distribution of individual deposits.

Geographical divisions.	1908	1911	1912	Increase 1912 over 1911.		Increase 1912 over 1908.	
				Amount.	Per cent.	Amount.	Per cent.
	Millions.	*Millions.*	*Millions.*	*Millions.*		*Millions.*	
New England States	$1,987.1	$2,323.5	$2,446.4	$122.9	5.28	$459.3	23.11
Eastern States	5,427.9	6,676.9	7,094.9	418.0	6.26	1,667.0	30.71
Southern States	913.8	1,283.3	1,374.2	90.9	7.08	460.4	50.38
Middle Western States	3,003.6	3,759.5	4,087.7	328.2	8.73	1,084.1	36.09
Western States	591.9	742.0	786.6	44.6	6.01	194.7	32.89
Pacific States	839.7	1,081.3	1,191.9	110.6	10.22	352.2	41.94
Islands	20.5	39.8	42.3	2.5	6.28	21.8	106.34
Total	12,784.5	15,906.3	17,024.0	1,117.7	7.02	4,239.5	33.16

From the foregoing it will be noted that the largest percentage of increase during the past year, 10.22 per cent, is shown for the Pacific States. In 1911 the largest percentage of increase was 15.62, in the Southern States. The percentage of increase in deposits during the current year for the other sections is, in the order named, as follows: Middle Western States, 8.73 per cent; Southern States, 7.08 per cent; island possessions, 6.28 per cent; Eastern States, 6.26 per cent; Western States, 6.01 per cent; and New England States, 5.28 per cent.

The largest volume of increase was in the Eastern States, or $418,000,000, followed by the Middle Western States with $328,200,000, the New England States with $122,900,000, the Pacific States with $110,600,000, the Southern States with $90,900,000, the Western States with $44,600,000, and the island possessions $2,500,000.

Since June, 1908, individual deposits held by the banks have increased 33.16 per cent. With the exception of the island possessions, where the increase is shown to be 106.34 per cent, the largest percentage of increase is shown for the Southern States, the gain in deposits for that section during the last four years being 50.38 per cent; next in order are the Pacific States with 41.94 per cent, the Middle Western 36.09 per cent, the Western 32.89 per cent, the Eastern 30.71 per cent, and the New England States 23.11 per cent.

In the following table is shown the classification of individual deposits in banks other than national, in national banks, and in all banks on June 14, 1912.

Classification of deposits in national and other banks.

Classification.	7,372 national banks.	17,823 State, etc., banks.	Total, 25,195 banks.
Individual deposits subject to check	$4,122,937,442.68	$4,200,548,180.85	$8,323,485,623.53
Savings deposits	733,643,936.11	[1] 5,762,548,771.49	[1] 6,496,192,707.60
Certificates of deposit	812,745,391.86	1,140,038,702.08	1,952,784,093.94
Certified checks	85,228,860.85	50,012,402.35	135,241,263.20
Cashier's checks	70,905,531.86	45,458,386.76	116,363,918.62
Total	5,825,461,163.36	11,198,606,443.53	17,024,067,606.89

[1] Exclusive of $284,203,157.82 deposits subject to check without notice, certificates of deposit, certified and cashier's checks reported by savings banks.

From the foregoing it will be noted that of the $17,024,000,000 on deposit in all reporting banks, over 38 per cent, or $6,496,000,000, in round amount, consists of savings deposits; $1,952,000,000 are certificates of deposit (time and demand); and $8,323,000,000 are commercial deposits, i. e., subject to check without notice.

SAVINGS DEPOSITS IN ALL BANKS.

Statistics relating to savings deposits are of special interest, by reason of the fact that such deposits are supposed to represent chiefly the accumulations of wage earners and other people of moderate means. Savings deposits in all banks of the country in June last aggregated $6,496,192,707.60, but if all deposits in the savings banks are termed "savings deposits," this aggregate will be increased to $6,780,395,865.42, or nearly 40 per cent of all individual deposits held by the banks. These figures measure and prove the increasing thrift of the American people.

The aggregate deposits in all banks on June 14, 1912, roundly stated, were $17,024,000,000; of this amount $6,496,000,000 was reported as savings deposits, the latter sum being exclusive of $284,200,000 held by savings banks subject to check without notice. Statistics showing the number of savings depositors for the current year are not available, but the information obtained upon this subject in 1911 showed that there were on June 7 of that year over 17,600,000 savings accounts on the books of the various banks of the country.

For the purpose of comparison the following table is presented relating to the classification of deposits in each class of banks as shown by reports of condition as of June 14, 1912.

Classification of deposits in each class of banks as of June 14, 1912.

Classification.	Number of banks.	Individual deposits subject to check without notice.	Savings deposits or deposits in interest or savings department.	Certificates of deposit.
State banks	13,381	$1,609,117,069.91	$657,477,220.31	$610,207,548.25
Mutual savings banks	630	15,907,801.72	3,592,530,070.33	96,528.65
Stock savings banks	1,292	178,127,748.36	574,822,459.57	87,099,928.02
Loan and trust companies	1,410	2,319,055,959.95	910,850,167.60	395,983,407.02
Private banks	1,110	78,339,600.91	26,868,853.68	46,651,290.14
Total, State, etc., banks	17,823	4,200,548,180.85	5,762,548,771.49	1,140,038,702.08
National banks	7,372	4,122,937,442.68	733,643,936.11	812,745,391.86
Grand total	25,195	8,323,485,623.53	6,496,192,707.60	1,952,784,093.94

Classification.	Certified checks.	Cashiers' checks outstanding.	Total.
State banks	$32,254,762.10	$10,921,297.42	$2,919,977,897.99
Mutual savings banks		123,427.41	3,608,657,828.11
Stock savings banks	795,385.48	2,052,338.18	842,897,859.61
Loan and trust companies	16,658,017.77	32,030,686.58	3,674,578,238.92
Private banks	304,237.00	330,637.17	152,494,618.90
Total, State, etc., banks	50,012,402.35	45,458,386.76	11,198,606,443.53
National banks	85,228,860.85	70,905,531.86	[1] 5,825,461,163.36
Grand total	135,241,263.20	116,363,918.62	17,024,067,606.89

[1] United States deposits not included.

A statement showing the aggregate amount of savings deposits held by the banks in each State and geographical division, with the per capita, will be found incorporated with the table of resources and liabilities on another page.

By reference to the table in question it will be noted that the largest amount of savings deposits is held by banks in the State of New York, namely, $1,826,300,000, followed by Massachusetts with $857,700,000, Pennsylvania with $598,200,000, and California with $389,500,000. In the Southern States the Virginia banks hold the largest amount of savings deposits, or $41,500,000, Louisiana being next with $29,600,000, Georgia third with $26,700,000, West Virginia fourth with $26,500,000, and South Carolina fifth with $24,800,000. In the Middle Western States Illinois is first with $323,700,000, Ohio second with $312,700,000, Michigan third with $218,000,000, and Iowa fourth with $128,800,000. In the Western States Nebraska is first with $18,300,000, Colorado second with $18,000,000, and, Montana third with $7,800,000. In the Pacific States, as has been stated, California leads, while Washington is second with $44,200,000, Utah third with $20,600,000, and Oregon fourth with $16,700,000. There are over $8,000,000 reported as savings deposits in the island possessions.

The amount of savings deposits per capita for the United States is $67.77 and for each geographical section is as follows: New England States, $237; Eastern States, $129.23; Pacific States, $82.43; Middle Western States, $46.13; Southern States, $9.89; Western States, $8.56.

STATE, SAVINGS, PRIVATE BANKS, AND LOAN AND TRUST COMPANIES.

Summaries of the reports received for the current year from State, savings, and private banks, and from loan and trust companies show the condition on June 14, 1912, of 17,823 banks other than national. The aggregate resources of these banks are $14,124,878,897.03. In 1911, 17,115 banks other than national reported, with aggregate resources of $13,248,034,688.36, or less by 708 in the number of banks, and $876,844,208.67 in aggregate resources, than in 1912. The returns for the current year include 13,381 commercial banks, 630 mutual savings banks, 1,292 stock savings banks, 1,110 private banks, and 1,410 loan and trust companies. The returns for each class of bank, with the exception of private banks, are practically complete.

The compilations of banking reports as made by the State authorities in a number of States include all classes of incorporated banks under the head of "State banks" and considerable difficulty is experienced by this office in making a proper classification of the trust companies and of the stock savings banks in operation in such States, due to the great confusion in the use of the term "trust company" and "bank" as well as in the use of the term "savings bank." It is claimed that a large percentage of the so-called "trust companies" do only a banking business, and it is known that a large number of the so-called "savings banks" are strictly speaking only commercial banks. In some States, notably California, a system of departmental banks prevails, where any commercial bank may carry on a savings or a trust company business, or both, but each kind of business must be kept separate and distinct. Specific regulations apply to each department.

Where the banking department of a State makes no separate classification, this office has adopted the plan of requesting each bank cashier to designate on his report the class of bank reporting. When this is not done, the proper classification is determined by the character of the business indicated in the report. In this manner it has been possible to make a satisfactory classification of trust companies and of savings banks for States where the law does not provide for a separate classification by the State authorities.

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INSTRUMENTS OF CREDIT.

The extent to which checks, drafts, and other instruments of credit are used in daily business transactions has been the subject of various investigations, and which have been analyzed in detail in the reports issued for the years covering the investigations made. As the question is frequently raised as to the relative use of instruments of credit, there appears in the appendix to this report a table showing for two dates in 1881 and 1890, and one date in 1892, 1894, 1896, and 1909, the percentage of receipts of each kind of currency, as well as the percentage of checks, drafts, and clearing-house exchanges, etc. The fact is generally recognized that over 90 per cent of the daily transactions are effected through the medium of instruments of credit. The reports received for June 30, 1881, indicate a percentage of instruments of credit of 95.10; on September 17 of that year of 94.10, while on July 1 and September 17, 1890, the percentages were

92.5 and 91 respectively. The returns for September 15, 1892, show a percentage of 90.6. On July 1, 1896, and March 16, 1909, the returns included a limited number of banks other than national, and the percentages in those years were 92.6 and 94.1, respectively. A special investigation was made for May 15, 1894, but was confined to national banks and their transactions with retail merchants. Only about two-thirds of the national banks then in existence made the report in question. The returns necessarily indicated the use of a larger proportion of cash to total transactions than the returns for other periods. On the date in question it appears that 41.1 per cent of the transactions were effected in cash and 58.9 per cent in checks, etc.

NATIONAL CURRENCY ASSOCIATIONS.

Under authority of the act of May 30, 1908, providing for the issue of "additional currency" secured otherwise than by United States bonds, 18 national currency associations have been formed, all of which, with the exception of the Los Angeles association, were formed prior to the current year. Each association has an aggregate capital and surplus of at least $5,000,000, and is composed of at least 10 national banks having an unimpaired capital and an unimpaired surplus of not less than 20 per cent of the capital, and having United States bonds on deposit to secure circulation to the extent of at least 40 per cent of its capital. There are 286 national banks forming these 18 national currency associations, their capital aggregating $321,105,710 and surplus $281,544,722. The capital represented is slightly in excess of 30 per cent of the paid-in capital stock of all national banks, as shown by the reports for September 4 last.

The title, membership, capital, and surplus of each of the associations are shown in the following table:

National currency associations.

Associations.	Number of banks.	Capital.	Surplus.
National Currency Association of Washington, D. C.	10	$5,702,000	$4,792,512
National Currency Association of the city of New York, N. Y.	33	117,052,000	127,175,000
National Currency Association of the city of Philadelphia, Pa.	27	20,975,000	36,665,000
National Currency Association of the State of Louisiana	10	6,100,000	4,030,000
National Currency Association of the city of Boston, Mass.	14	26,700,000	18,950,000
National Currency Association of Georgia	28	8,206,000	6,434,000
National Currency Association of the city of Chicago	10	42,750,000	25,950,000
National Currency Association of St. Louis, Mo.	10	19,510,000	9,095,000
National Currency Association of the Twin Cities (St. Paul and Minneapolis)	14	10,750,000	9,545,000
National Currency Association of the city of Detroit, Mich.	15	6,325,000	3,101,200
National Currency Association of Albany, Rensselaer, and Schenectady	11	3,560,000	3,385,000
National Currency Association of Kansas City and St. Joseph, Mo.	10	6,650,000	3,800,000
National Currency Association of the city of Baltimore, Md	18	12,340,710	7,752,010
National Currency Association of Cincinnati, Ohio	10	14,300,000	6,450,000
National Currency Association of Dallas, Tex.	14	3,760,000	3,100,000
National Currency Association of Alabama	25	5,700,000	3,497,500
National Currency Association of Denver, Colorado Springs, and Pueblo	15	4,700,000	4,991,500
National Currency Association of Los Angeles, Cal.[1]	12	6,025,000	2,831,000
Total	286	321,105,710	281,544,722

[1] Organized Mar. 28, 1912.

CLEARING-HOUSE TRANSACTIONS.

Data relating to the transactions of the clearing houses of the country are assembled by the manager of the New York Clearing House, and through the courtesy of that officer it is possible to present in this report a comparative statement of the volume of exchanges for the year ended September 30, 1912, of the 151 clearing houses in the United States. The volume of transactions for the current year was $168,506,362,000, as compared with $159,508,005,000 for 1911, the net increase being $8,998,357,000. Gains are shown in the returns from 125 associations and losses in 26. The 15 associations showing transactions in excess of $1,000,000,000 are the following: New York, Chicago, Boston, Philadelphia, St. Louis, Pittsburgh, San Francisco, Baltimore, Cincinnati, Kansas City, Mo.; Minneapolis, Cleveland, New Orleans, Detroit, and Los Angeles.

By reason of consolidations, the number of bank members of the New York Clearing House has decreased from 67 in 1911 to 65 in 1912, although the capital increased from $170,275,000 to $174,275,000. The New York exchanges in 1911 aggregated $92,420,120,000, and in 1912, $96,672,301,000. Balances paid in currency in 1911 total $4,388,563,113, and in 1912, $5,051,262,292. In 1911, 85.5 per cent of the balances were settled in gold and 14.5 per cent in other currency, while in 1912 the percentages were 75.4 and 24.6. The average daily clearings of the New York association were $305,016,898 in 1911, and $319,050,498 in 1912.

Transactions of the Assistant Treasurer of the United States at New York with the clearing house for the year ended September 30, 1912, were as follows:

Exchanges received from the clearing house	$733,715,901
Balances received	119,458,347
Exchanges delivered to the clearing house	775,511,350
Balances paid to the clearing house	77,662,898

Since September, 1902, the membership of the New York association has increased from 60 to 65, the capital from $100,672,700 to $174,275,000, and the clearings from $74,753,000,000 to $96,672,000,000. This association made its first report in 1854, at which time the membership was 50, the capital $47,044,900, and the clearings for that year $5,750,455,987. The relatively small amount of clearings paid in money is shown in the table covering the transactions of this association annually from 1854 to 1912, and is stated at an average of 4.63 per cent.

DIGEST OF NATIONAL-BANK DECISIONS.

During the past year there have been two decisions, one by the Supreme Court of the United States (Thomas *v.* Taylor, 224 U. S., 73), and one by the United States Circuit Court of Appeals (Chesbrough et al. *v.* Woodworth, 195 Fed. Rep., 875), bearing on the liability of directors for damages sustained by parties who purchase stock in banks, relying on the published reports of condition of said banks, the reports of condition in each instance being false and large amounts of worthless assets being carried at full value on the books of the bank and shown as such in the reports of condition.

In the case of Thomas *v.* Taylor it is stated by the court that prior to March 1, 1904, the Comptroller of the Currency had informed the

directors of the bank by letter that certain specified assets, amounting to $194,107.02, must be regarded as doubtful and that immediate steps should be taken for their collection or removal from the bank, and that the directors had knowledge of such letter. Nevertheless, on April 8, 1904, pursuant to a call of the comptroller, a report of the condition of the bank at the close of business on March 28, 1904, made in regular form and attested to be correct by each of the defendants, was published as required by law. In this report was included as a part of the resources of the bank the doubtful assets to which the attention of the directors had been called by the comptroller. The report also stated that the capital stock of the bank was $100,000, that there was a surplus of $50,000, and that there were undivided profits of $13,456.75; thus making the book value of the stock a little over 160. The plaintiff in the case knew of the contents of this published report and relying on it he purchased 30 shares of the stock in June, 1904, for the sum of $4,800, approximately its book value as shown by the report of condition.

On June 27, 1904, the comptroller notified the bank that its capital had become totally impaired and levied an assessment of 100 per cent to make good said impairment, and the plaintiff in the case was compelled to pay $3,000 on account of the stock he had recently purchased.

The plaintiff in error contended that the statement was not voluntary, having been made under command of the national banking act, and therefore an element of the action of deceit was wanting, and that such act requires "proof of something more than mere negligence and recklessness. Nothing short of an intentional violation will suffice."

The Supreme Court, in referring to this contention, stated that "there is in effect an intentional violation of the statute when one deliberately refuses to examine that which it is his duty to examine. And such was the conduct of plaintiffs in error in this case. They had notice from the Comptroller of the Currency that $194,000 of the items counted as assets of the bank were doubtful and should be collected or charged off. This was a direct warning to them by the bank examiner and the comptroller that assets of nearly twice the amount of the capital stock were considered doubtful. They, notwithstanding, represented the assets to be good. Such disregard of the direction of the officers appointed by the law to examine the affairs of the bank is a violation of the law. Their directions must be observed. Their functions and authority can not be preserved otherwise and be exercised to save the banks from disaster and the public who deal with them and support them from deception."

In the case of Chesbrough et al. *v.* Woodworth the United States circuit court of appeals held that the making and publishing by a national bank of the reports required by statute are not merely for the information of the comptroller, but to guide so much of the public as may have occasion to act thereon, and one who buys from another stock in a bank in reliance on a false report of its condition and suffers damages thereby has a right of action against any officer or director who, knowing its falsity, authorized such report, under Revised Statutes, section 5239, which makes them individually liable for damages sustained by the association, its stockholders, or any other person. The court further held that the damages in such a case were

personal with the plaintiff who sues in his own individual right and not in that of the association, and that the action against the directors involves no direct issue of negligence, the primary issue being whether the defendant caused or permitted to be made a statement of the bank's condition on which plaintiff relied to his injury, and which statement the defendant knew was materially false. The liability of the directors was held to be several; the plaintiff could sue one or more and must make out a sufficient case against each one to authorize a recovery against him.

In a case where the falsity of the statement consisted in including worthless assets in the loans and discounts, and the making and publishing of the statement in such case was merely the automatic result of the bookkeeping, the publishing of the statement did not constitute the underlying wrong, and any director who participated in or approved the continued carrying on the books of such paper as assets at its face value to an amount sufficient to affect the standing of the bank, and knowing its worthlessness, is bound to know under the prevailing practice that the statements will be substantially false, is responsible therefor. While the duty of charging off such worthless paper is that of the board of directors as an entity, and in such matters the board has a reasonable discretion, when the duty exists and is wholly unperformed an individual director may be personally liable because of his participation in the failure to act by failing to make reasonable personal efforts to induce the proper action. The general rule of damages in action of deceit that one induced by false representations to purchase property at more than its value is entitled to recover the difference between what the property was actually worth and what it would have been worth if the representations had been true, not exceeding the sum paid, is not applicable to an action against directors of a national bank under Revised Statutes 5239 by one who purchased stock of the bank in reliance on published statements of its condition which were false in that they included as assets a large amount of worthless paper, since under such section defendants are liable only for knowing violations of the law. In such a case the measure of plaintiff's recovery is the difference in the fair market value of his stock if all the paper had been of a character entitling it to be reported as assets, and that sum which would have been its fair market value if the directors in the exercise of due care and good faith had charged worthless paper off the books and not reported it as collectible.

In the appendix to this report will be found a supplement to the last digest of decisions of national-bank cases, including all decisions in 224 United States Reports and 199 Federal Reporter.

EXAMINATIONS BY DIRECTORS' COMMITTEES.

Realizing that the most effective efforts to improve the condition of national banks as a whole must come from the management, the Comptroller of the Currency for years has been urging the directors of each national bank to supplement the work of the national bank examiner by examinations by an examining committee of their own appointment, and with this in view to provide in the by-laws for an examining committee to look carefully into the affairs of the bank at stated intervals.

In order to determine the effectiveness of these examinations, the comptroller decided to ask the banks to forward to this office copies of reports made by the examining committees, and on June 1, 1912, the following letter was addressed to the banks:

In order to bring about a more thorough cooperation between the banks, the comptroller's office, and the examiners, the comptroller is asking the banks to send to this office copies of all reports of examinations made for the directors by their examining committees or accountants employed by them. These are to be checked up with the last reports made by national-bank examiners, and any additional information which they contain will be carefully noted.

The comptroller feels that with the cooperation of the examining committees in the national banks every dishonest employee can be detected; that forged paper will be found; that losses that may escape the examiner will be ascertained by the examining committees and in turn by the boards of directors; and that in general by this sincere and hearty cooperation the national banks will be lifted to a higher degree of conservatism and safety.

It will be appreciated very highly by me if you will agree to send here, for the files of this office, copies of all reports made hereafter to your board of directors. Will you please advise me by return mail of your willingness to do this, and whether such examinations are made by your committee annually or semiannually.

Reply to this letter was received from nearly 5,000 banks, the directors signifying their willingness in practically every case to comply with this request. There have been received to date reports of directors' examinations from over 3,000 banks.

It was apparent from the reports received that a large proportion of these examinations were ineffective in that many of the points essential to a thorough examination were covered only in a superficial way or omitted entirely, this being especially true of the liability side of the ledger, many examinations being confined entirely to the counting of the cash and inspecting the notes and securities. This appeared to be due not to a lack of willingness on the part of the directors but to their lack of knowledge as to what constituted an examination and unfamiliarity with the proper methods of verifying many of the assets and liabilities of the bank.

To meet this condition the comptroller, on July 9, 1912, sent to the banks a circular directing attention to the points that should be covered by an examination, and made the following suggestions:

(1) The cash should be counted and the total compared with the books of the bank. Cash items should be carefully scrutinized, and any improper items, such as unposted checks held for the purpose of not showing overdrafts, and other items that can not be readily converted into cash, should be reported.

(2) The bonds and other securities of the bank should be examined and those not on hand should be verified by reference to the receipts of the parties with whom they are deposited, and if the receipts are old they should be verified by correspondence. The market value and the amount at which carried on the books in the aggregate should be shown, and any stocks held by the bank should be listed, with a statement showing the reason the securities were taken by the bank.

(3) The notes should be carefully checked and their total compared with the general ledger. The genuineness, value, and security of each note, and of any collateral thereto, should be carefully determined, and any losses ascertained, or probable, in the judgment of the committee, should be noted. The liabilities of each of the larger borrowers, and loans to affiliated interests, should be aggregated and carefully considered. The report should also show the general character of the loans—whether well distributed; the general character of the collaterals; whether corporations in which officers or directors are interested borrow to an undue extent; also any large liabilities of the officers or directors. It should also be shown whether all paper claimed by the bank as its own property, including collaterals, is properly indorsed or assigned to it, and all mortgages recorded. Any loans exceeding 10 per cent of the capital and surplus of the bank should be reported. The signatures of all note makers and indorsers should be carefully scrutinized, and any erasures and alterations or any

indications of manipulation should be carefully investigated and reported to the full board. All overdue paper should be listed and comment made as to its collectibility.

(4) The certificates of deposit and the cashier's checks should be verified by totaling those outstanding as shown by the register and comparing with the general ledger, and also by comparing the canceled certificates and checks with the register and checking them against the stubs.

(5) The copy retained by the bank of the report of condition made to the Comptroller at the last call should be compared with the bank's books at that date, particularly with reference to the excessive loans and directors' and officers' liabilities reported to the board of directors.

(6) The bank's last reconcilements of accounts with correspondent banks should be compared with the bank's books, and a transcript of the bank's account from the date of the last reconcilement to the date of the examination sent to the correspondent bank with a request for verification.

(7) Individual ledger balances should be verified in such manner as the directors may deem advisable, by calling in pass books, by sending out reconcilements of certain accounts selected by the directors, or in some other suitable way. A trial balance of the ledger should be taken by some member of the committee, or at least by some person other than the clerk engaged on the ledger.

(8) Overdrafts should be totaled and carefully considered, and the report should show any estimated losses.

(9) The committee should consider carefully the "profit and loss" and the "expense" accounts, with a view of determining whether the charges against those accounts are proper, whether the earnings of the bank warrant the expense charges, and whether the bank is making a legitimate profit.

(10) The examining committee should inquire carefully into the arrangement of the working affairs of the bank and ascertain whether any employee who keeps the individual ledger receives deposits or balances pass books; and whether the employees are properly bonded, and in whose custody the bonds are lodged.

(11) Any liability of the bank for borrowed money should be listed, and the proper authority and the necessity for such borrowing ascertained. The total amount of the present liabilities of that nature should be reported to the board, including money borrowed from other banks on certificates of deposit.

The report of the directors or the examining committee should show that these points have been covered, and should recite any deficiencies discovered.

The report should also contain a complete statement of the total assets and liabilities of the bank, with any additions or deductions that in the judgment of the directors should be made as a result of their investigation. There should also be included a detailed statement of the loans which the directors estimate as worthless, doubtful, or insufficiently secured, giving reasons therefor, and as nearly as possible the real value.

A statement should also be made of any matters which in the opinion of the committee affect in any way the bank's solvency, stability, or prosperity.

It is believed that there are few instances where the examining committee can not, if they will take the necessary time, cover these points fully and satisfactorily.

An examination twice a year, along the above lines, by a committee of the directors who will give sufficient time to the work to make it thorough and complete, can not fail to be of great benefit to all concerned, and this the directors owe to the shareholders who have placed them in their positions of trust.

In order to give the directors every possible assistance, the national bank examiners were instructed to take up with the directors upon their next round of examinations the proper methods of verification and to give them all the information along that line that they might desire.

The examiners are now doing this, and in many cases the board of directors or the examining committee are accompanying the national bank examiner through all the details of his work.

Reports of examining committees are now coming into the comptroller's office daily. Each one is being carefully scrutinized, and where it appears that the ground was not thoroughly covered, a letter is being written calling attention to the specific items omitted and suggesting that upon the examiner's next visit he be consulted in regard to them.

A decided improvement is already noticeable in the character of the examinations, and it is believed that during the coming year practically every board of directors will be fully informed as to the proper methods of verifying the affairs of their bank and will be making thorough examinations, and that the effectiveness of directoral supervision from now on will be greatly increased.

LAWRENCE O. MURRAY,
Comptroller of the Currency.

REPORT OF THE COMMISSIONER OF INTERNAL REVENUE.

TREASURY DEPARTMENT,
OFFICE OF COMMISSIONER OF INTERNAL REVENUE,
Washington, D. C., November 1, 1912.

SIR: I have the honor to make the following report of the work of the Bureau of Internal Revenue during the fiscal year ended June 30, 1912. Included in this report is a statement of receipts from the several sources of internal revenue for the months of July, August, and September of the current fiscal year.

RECEIPTS.

The total receipts of the bureau for the past fiscal year amounted to $321,615,894.69. Of this total, there was collected from ordinary sources $293,032,634.88, an increase of $4,017,860.15 over the previous fiscal year, and from the special excise tax on corporations there was collected $28,583,259.81, a decrease of $4,928,265.19, making a net decrease from the collections of the fiscal year ended June 30, 1911, of $910,405.04.

The collections for the past fiscal year, with the exception of the previous year, exceeded the best record of former years, namely, 1866, by $11,495,446.56.

The decrease in the amount of corporation tax collected in 1910 is due to the fact that of the corporation tax assessed on returns of corporations for the calendar year 1909, the first year of the law, nearly six and one-half millions of dollars could not be collected until after July 1, 1910, which amount was collected during the fiscal year 1911, whereas of the tax assessed on returns of corporations for the calendar year 1910 only about two millions of dollars was outstanding on July 1, 1911, and was collected during the fiscal year 1912. This difference of four and one-half million dollars appearing in the 1911 collections belonged really to the fiscal year 1910.

The receipts from ordinary sources for the first three months of the fiscal year 1913 were $76,161,408.32 as compared with $73,878,102.46 for the first three months of the fiscal year 1912, an increase of $2,283,305.86. Corporation tax collected for the first three months of the fiscal year 1913 amounts to $1,880,379.82 as compared with $1,687,018.08 collected during the first three months of the fiscal year 1912, an increase of $193,361.74, thus making a net increase in total collections for the first three months of the fiscal year 1913 over the first three months of the fiscal year 1912 of $2,476,667.60.

Based on the data at this time available I estimate that the collections for the fiscal year 1913 will approximate $326,000,000, of which $297,000,000 is expected to be collected from ordinary sources, and $29,000,000 from the excise tax on corporations. I estimate that, industrial conditions remaining substantially the same and no material changes being made in the internal-revenue laws, the collections for the fiscal year ending June 30, 1914, will approximate $328,000,000, of which $298,500,000 will be collected from ordinary sources and $29,500,000 from the excise tax on corporations.

The objects of internal taxation producing the largest amounts of internal revenues during the past fiscal year are distilled spirits, exclusive of special taxes, $149,933,706.53; fermented liquors, exclusive of special taxes, $62,108,633.39; tobacco, $70,590,151.60; and corporation tax, $28,583,259.81.

RECEIPTS IN LARGE TAX-PAYING DISTRICTS.

The States in which the largest collections of internal-revenue taxes were made during the fiscal year 1912 are Illinois, $52,614,483.95; New York, $43,866,204.28; Kentucky, $32,187,875.16; Indiana, $30,321,315.73; Pennsylvania, $26,453,570.07; and Ohio, $23,823,944.53.

Among the States in which the smallest collections were made are Idaho, Mississippi, New Mexico, North Dakota, Vermont, and Wyoming.

Of the 67 collection districts subject to internal-revenue laws, the Fifth District of Illinois reported the largest collections, $29,868,439.32.

The fiscal year 1912 witnessed a record production of distilled spirits and a large increase in the withdrawals of distilled spirits; there was also an increase in the amount of tobacco and snuff manufactured, an enormous increase in cigarettes; a slight decrease in the production of beer, a slight decrease in corporation tax assessments, and a considerable increase in the production of oleomargarine.

In 1911 the total production of distilled spirits was 183,355,527 gallons; in 1912, 187,571,808 gallons, an increase of 4,216,281 gallons. In 1911, 134,600,193 gallons of tax-paid spirits were withdrawn; in 1912, 135,826,789 gallons, an increase of 1,226,596 gallons.

The three States having the largest production of distilled spirits during the past fiscal year are Kentucky, 43,749,192 gallons; Illinois, 38,932,758 gallons; Indiana, 27,522,220 gallons. The three collection districts having the largest output of distilled spirits are fifth Illinois, 28,928,567 gallons; fifth Kentucky, 23,103,625 gallons; seventh Indiana, 17,008,392 gallons.

During the fiscal year ended June 30, 1912, there were tax paid for bottling in bond 9,752,486 tax gallons as compared with 10,631,091.5 tax gallons tax paid during the previous fiscal year, a decrease of 878,605.5 tax gallons.

The five States which produced the largest quantity of fermented liquors are New York, 13,677,850 barrels; Pennsylvania, 7,449,543 barrels; Illinois, 6,263,862 barrels; Wisconsin, 5,016,701 barrels; Ohio, 4,742,665 barrels.

The three collection districts which produced the largest quantity of fermented liquors are third New York, 5,440,344 barrels; first Illinois, 5,321,342 barrels; first Wisconsin, 4,244,395 barrels.

The four States producing the greatest number of cigars weighing more than 3 pounds per thousand, and the production of each during the year, are as follows:

Pennsylvania	1,972,175,173
New York	1,159,117,721
Ohio	664,701,917
New Jersey	524,577,362

The two districts showing the largest production of cigars are the first Pennsylvania, 742,538,367, and the ninth Pennsylvania, 732,029,293.

The States showing the greatest production of little cigars (weighing not more than 3 pounds per thousand) are:

Maryland	535,422,680
Pennsylvania	332,664,240
Virginia	212,747,230

The greatest production by districts is as follows:

Maryland	535,422,680
First Pennsylvania	331,636,140
Sixth Virginia	193,923,170
First New York	101,999,920

The States of New York, Virginia, North Carolina, Louisiana, California, and Pennsylvania, in the order named, show the greatest production of cigarettes weighing not more than 3 pounds per thousand.

New York	5,705,930,931
Virginia	2,348,455,425
North Carolina	1,398,564,000
Louisiana	658,348,645
California	144,302,430
Pennsylvania	104,091,205

The three districts showing the greatest production of little cigarettes are the second Virginia, which produced 2,336,503,825, the third New York, which produced 1,975,403,145, and the first New York, which produced 1,969,742,160.

New York State produced the greatest number of large cigarettes, showing a production of 15,553,075, of which number 11,189,805 were manufactured in the third district and 4,148,270 in the second district.

The States of North Carolina, Missouri, Ohio, Kentucky, Virginia, and New Jersey, in the order named, were the States reporting the largest manufacture of both chewing and smoking tobacco, the quantity manufactured being as follows:

	Pounds.
North Carolina	88,862,092
Missouri	71,513,125
Ohio	42,660,356
Kentucky	38,113,187
Virginia	29,915,595
New Jersey	29,740,544

The districts producing the largest quantity were:

	Pounds.
First Missouri	71,370,838
Fifth North Carolina	51,813,068
Fourth North Carolina	37,049,024
First Ohio	34,995,692
Fifth Kentucky	32,939,231

The districts in which the largest amounts of corporation tax were collected are second New York, $4,109,430.34; first Illinois, $2,654,302.48; first Pennsylvania, $1,671,507.63; twenty-third Pennsylvania, $1,593,072.16; and third Massachusetts, $1,421,308.52. The four States showing the largest collections from this source are New York, $6,519,320.42; Pennsylvania, $3,582,356.98; Illinois, $2,869,309.88; and Ohio, $1,962,765.88.

COST OF COLLECTING INTERNAL-REVENUE TAXES.

The cost of collecting the internal revenue for the past fiscal year was approximately $17.14 per $1,000, or 1.71 per cent. The cost of collection the previous year was $16.80 per $1,000, or 1.68 per cent. The reason for this slight increase in cost is due to the fact that Congress authorized slight increases in the compensation of certain classes of distillery officers, and authorized to distillery officers leave of absence with pay, and also traveling expenses to and from assignments.

In 1866, the year in which the largest sum was collected prior to the fiscal year 1911, the cost of collection was $24.80 per $1,000, or 2.48 per cent.

The average cost of collection since the establishment of the bureau is $25.89 per $1,000, or 2.59 per cent.

The cost of collection for the past fiscal year, distributed approximately among the different items of appropriation, was as follows:

Salaries and expenses of collectors of internal revenue, 1912	$2,105,472.27
Miscellaneous expenses, internal-revenue service, 1912	91,462.31
Salaries and expenses of agents and subordinate officers of internal revenue, 1912	2,585,962.81
Paper for internal-revenue stamps, 1912	79,889.13
Punishment for violation of internal-revenue laws, 1912	141,663.82
Salaries, office of Commissioner of Internal Revenue, 1912	340,829.48
Expenses of collecting the corporation tax, 1912	139,980.25
Classifying, etc., returns of corporations, 1912	24,723.87
Total amount expended	5,509,983.94

NOTE.—Not included in this total are bills approximating $5,000, covering expenses of deputy collectors in excess of allowances, transportation orders, miscellaneous items, etc., not yet adjusted.

The amount expended from the appropriation "Refunding internal-revenue collections" is $70,713.96.[1] This amount is not considered as a part of the expense incident to the collection of internal revenue, so is not included in expenses enumerated above.

* * * * * * *

OBJECTS OF TAXATION.

DISTILLED SPIRITS.

The fiscal year ended June 30, 1912, witnessed the largest production of distilled spirits in the history of the country. There were produced from materials other than fruit during the year 178,249,985 taxable gallons. This quantity exceeded the largest previous production, which was during the fiscal year ended June 30, 1911, by 2,847,590.5 gallons.

The tax-paid withdrawals during the fiscal year 1912 of spirits distilled from materials other than fruit amounted to 133,259,147.6

[1] This amount will be increased considerably by payment of bills not yet presented.

gallons, exceeding the withdrawals of 1911 for the same purpose by 1,200,511.1 gallons, and being surpassed only by the withdrawals during the fiscal year 1907, which amounted to 134,031,066.7 gallons.

The stock of distilled spirits remaining in distillery and general bonded warehouses at the end of the fiscal year June 30, 1912, amounted to 263,785,831.8 gallons, this quantity being the largest on record, exceeding the stock on hand June 30, 1911, by 14,506,485.2 gallons.

Notwithstanding the fact that the quantity of distilled spirits remaining in warehouses June 30, 1912, was the largest in the history of the Bureau of Internal Revenue, the quantity of such spirits in bond, which was more than 4 years old and eligible to be bottled-in-bond, was only 37,588,248.9 gallons, this quantity being less than the quantity of spirits of the same age in bond on June 30, 1911, by 14,608,256.9 gallons.

The following table, showing the production, withdrawals on payment of tax, and quantities remaining in warehouses during the fiscal year ended June 30, 1898, to June 30, 1912, affords interesting data on this subject:

Fiscal year.	Produced.	Withdrawn.	Remaining in warehouse.
	Gallons.	*Gallons.*	*Gallons.*
1898	80,762,213.4	78,246,032.9	132,986,266.7
1899	97,066,554.7	83,694,336.1	136,841,278.9
1900	105,484,699.8	93,391,827.8	138,087,348.9
1901	124,520,599.8	96,191,721.5	152,736,138.0
1902	128,623,401.9	103,304,981.5	168,742,430.5
1903	141,776,202.1	112,736,168.0	188,350,778.1
1904	134,311,952.0	116,626,305.6	195,135,925.8
1905	147,810,794.3	115,994,[illegible]57.5	215,557,323.6
1906	145,666,125.1	122,317,943.1	226,735,828.8
1907	168,[illegible]73,013.2	134,031,[illegible]36.7	245,438,816.0
1908	126,[illegible]740.1	11[illegible],[illegible]94.4	235,026,128.2
1909	133,450,755.1	114,6[illegible],575.2	229,141,434.0
1910	156,237,526.4	126,384,726.7	233,508,674.6
1911	175,402,395.5	132,058,636.5	249,279,346.6
1912	178,249,985.0	133,259,147.6	263,785,831.8

BOTTLED-IN-BOND SPIRITS.

During the fiscal year ended June 30, 1912, 9,752,486.0 gallons of distilled spirits, on which the tax had been paid, were bottled-in-bond at distilleries. This quantity was a decrease of 878,605.5 gallons as compared with the quantity bottled-in-bond during the previous year. This decrease, it is believed, was occasioned by many of the distillers not having in bond spirits of the various bottling ages.

Statement of ages of distilled spirits remaining in warehouses at the end of the fiscal years June 30, 1911 and 1912.

Age.	1911.	1912.
Less than 1 year old	80,475,706.0	78,275,598.0
More than 1 and less than 2	56,164,345.7	67,691,159.1
More than 2 and less than 3	38,557,265.4	48,732,995.0
More than 3 and less than 4	21,895,523.7	31,497,831.0
Less than 4 years old	197,082,840.8	226,197,583.1
More than 4 and less than 5	28,354,960.1	13,322,229.9
More than 5 and less than 6	12,443,581.1	13,832,886.2
More than 6 and less than 7	7,736,310.7	6,603,167.3
More than 7 years old	3,661,653.9	3,830,204.4
More than 4 years and eligible to be bottled-in-bond	52,196,505.8	37,588,487.8
Total in bond	249,279,346.6	263,786,070.9

DENATURED ALCOHOL.

The withdrawal of distilled spirits, free of tax, for denaturation showed a considerable increase during the year, 13,955,903.8 gallons having been withdrawn during the fiscal year ended June 30, 1912, as compared with 11,682,887.9 gallons withdrawn during the fiscal year 1911, an increase of 2,273,015.9 gallons.

Of this amount approximately 7,000,000 proof gallons was completely denatured and was used generally by the public. Considerable advance has been made in perfecting alcohol burners, and this product is used to a considerable extent in heating freight cars and other places where it is necessary that the heat be very constant over a continued period of time with a minimum care of the burners. Considerable amounts are also used for lighting and some for cooking purposes, and in certain lines of manufacture, while quite an amount is used in the testing of citrus fruits for market.

About 7,000,000 proof gallons was withdrawn and specially denatured for use in certain industries. Of this quantity the paint and varnish manufacturers consumed 3,600,000 proof gallons; manufacturers of ether and fine chemicals, 715,000 gallons; manufacturers of tobacco, 660,000 gallons; manufacturers of commercial powder and fulminate of mercury, 380,000 gallons; manufacturers of soaps, 167,000 gallons; and the manufacturers of vinegar, 162,000 gallons. Various industries used in smaller quantities the remainder.

While provision is made in the act of March 2, 1907, for the establishment of industrial distilleries, none of these plants has been operated during the year.

Attention is again called to the fact that the work in connection with denatured alcohol is increased in proportion to the increased amount of this product used, and no appropriation being made for this purpose looking after this work is now beginning to draw heavily upon the general internal revenue force. It is believed that Congress should make an appropriation to cover this work and should impose a nominal tax—say 1 cent per proof gallon—on all alcohol withdrawn for denaturation, which tax would yield a return approximately equal to the amount that should be appropriated to properly take care of the work.

TAX-FREE ALCOHOL.

During the fiscal year just passed there was withdrawn approximately 2,400,000 proof gallons of alcohol tax-free for the use of the Government in the manufacture of smokeless powder, and for scientific institutions as provided by law. Of this amount the National Government consumed approximately 1,750,000 proof gallons tax-free, and the various scientific institutions throughout the country used 650,000 proof gallons. During the year an investigation disclosed the fact that for several years past the various scientific institutions throughout the country had not been complying with the law and regulations with respect to the use of tax-free alcohol and had thereby under the law incurred liability to double the tax on the entire amount withdrawn. To have paid the amount of liability thus incurred would have bankrupted a large number of these institutions. The Treasury Department recommended and Congress enacted into

law a provision authorizing the bureau to grant relief in these cases provided there was no intentional fraud in connection therewith, and under this law relief has been granted in practically every case.

DISTILLERIES.

During the fiscal year ended June 30, 1912, there were operated, in the production of distilled spirits, 417 grain distilleries, 17 molasses distilleries, and 386 fruit distilleries, 820 altogether, a decrease of 103 distilleries as compared with the fiscal year ended June 30, 1911.

Four years ago there were operated 1,587 registered distilleries.

During the fiscal year ended June 30, 1912, the systematic investigation of every establishment engaged in the manufacture of distilled spirits was continued, and the investigations were extended to cover the whole field of manufacture, rectification, and sale of this product.

The system of gauging by weight was extended with results highly satisfactory to the bureau of internal revenue, and it is believed with results advantageous to the trade and industry.

A systematic course of instruction of all field and distillery officers was begun and comprehensive bulletins for the purpose of extending this work were prepared and promulgated. It is believed that, as a result of this work, the tax on distilled spirits is being much more closely collected, and as the persons from whom the tax is collected realize more and more that it is the purpose of the bureau to collect all the tax due, with as little annoyance and inconvenience to the legitimate taxpayer as possible, and that the bureau endeavors not only to collect the tax from one person but to see that every other person bears the same proportionate burden, the cooperation with the taxpayers has become much more cordial and the collection of the tax much more thorough and much easier.

There was a gratifying decrease in the number of cases of fraud during the year, excepting alone the practice of "moonshining" and "bootlegging," which seem to continue to increase in certain sections. With this exception the industry of manufacturing and selling distilled spirits shows as few cases of attempted fraud on the revenue as any industry with which the bureau of internal revenue has to deal.

FERMENTED LIQUORS.

The production of fermented liquors during the fiscal year ended June 30, 1912, was 62,176,694 barrels, or a decrease of 1,106,429 barrels, as compared with the high record for the year 1911.

The number of breweries operated during the year was 1,461, a decrease of 31 breweries as compared with 1911. There were 226 breweries equipped with pipe lines for conveying beer to the bottling premises. The authorization of this method of handling beer has proved of great benefit to the brewers, and, in the long run, economical to the Government.

There were no changes in the statutes relating to fermented liquors, and few serious frauds or violations of internal revenue laws in connection therewith were discovered during the year.

TOBACCO.

The receipts from the tax on manufactured tobacco, snuff, cigars, and cigarettes for the fiscal year ended June 30, 1912, amounted to $70,590,151.60, an increase over the collections from this source during the fiscal year ended June 30, 1911, of $3,584,201.04.

There were in operation during the calendar year 1911, 21,267 cigar factories and 478 cigarette factories, this being a decrease of 1,252 cigar factories and 53 cigarette factories. There were also registered 2,745 establishments producing manufactured tobacco, 73 producing snuff, 4,354 dealers in leaf tobacco, and 819 retail dealers in leaf tobacco in the United States.

The records indicate, however, practically no business in unmanufactured leaf tobacco.

I have the honor to renew the recommendation made last year that the Congress be asked to enact such legislation as will require every dealer in leaf tobacco to give a bond, the minimum penalty of which will not be less than $100, the same to be increased whenever the extent of the business done by such leaf dealer necessitates a larger penalty.

In the past year a number of irregularities have been discovered in the accounts of various dealers in leaf tobacco, their transactions not having been properly recorded by them, and it appears that a number of small cigar manufacturers have purchased from these dealers and have not properly reported their purchases, nor paid tax on the product thereof. In numbers of cases the dealers have disappeared and all opportunity for tracing the tobacco or collecting the tax on the cigars manufactured therefrom is lost. A small bond, that would not be a burden on the legitimate dealer, would, it is believed, effectually put a stop to this species of fraud, which is encountered with entirely too much frequency.

On account of the fact that special taxes on the occupations of manufacturers and dealers in tobacco have been abolished since July 1, 1902, it is recommended that section 26, act of October 1, 1890, be revised and amended so as to require registry only before, or within, the calendar month of commencing business. Collectors of internal revenue would thereby be relieved of considerable unnecessary labor, and there would be a considerable saving in printing and stationery. Dealers and retail dealers in leaf tobacco should not be relieved from annual registry on July 1 of each year unless bonds are required of them as hereinbefore recommended. If bonds are required, they also might be relieved from the annual registration.

The investigations begun during the previous year disclosed the fact that the removal of non-tax-paid cigars from factories by factory employees had grown to a great abuse, and that a large amount of revenue was being lost annually on this account. Orders were accordingly issued to see that the statutes, under which this act constitutes a serious offense, were strictly enforced, and it was also ordered that the tax should be paid on cigars even though consumed on the premises. Later investigations have disclosed that the number of cigars consumed on the bonded premises of manufacturers is relatively insignificant, and it is believed that the laws, with respect to removing nontax-paid cigars from the bonded premises, are now being fairly well enforced. A number of bills have been introduced

in the Congress for the purpose of giving to the employees tax-free cigars. From an administrative standpoint this office would not oppose legislation giving to employees the right to consume on the premises tax-free cigars, but it is obvious to any person who looks into the subject that to permit an employee, or anyone else, to take off the bonded premises articles on which a tax is levied and on which the tax has not been paid, is to seriously impair the efficiency of any tax-collecting system, and, in fact, will practically make the close collection of the tax on similar articles intended to be tax paid, an impossibility.

Continued efforts have been made to break up the practice of refilling cigar boxes with either inferior or nontax-paid cigars. It appears impossible to eliminate this practice, but every effort is being made to keep this fraud at a minimum.

During the past fiscal year there has been a phenomenal increase in the tax payment of cigarettes, 11,239,536,803 cigarettes having been tax paid during the fiscal year ended June 30, 1912, while only 9,254,351,722 were tax paid during the fiscal year ended June 30, 1911, an increase of 1,985,185,081.

From present indications this rate of increase is continuing.

SPECIAL EXCISE TAX ON CORPORATIONS.

There was collected from the special excise tax on corporations during the fiscal year 1912, $28,583,259.81, making the aggregate collections $83,054,568.55 for the three years the tax has been in existence. The total amount outstanding June 30, 1912, was $1,745,803.86, of which amount $336,361.07 is taxes assessed for the years 1909 and 1910 on revenue agents' reports, much of which was not due and payable until after the close of the fiscal year.

ASSESSMENTS.

Total corporation taxes assessed in fiscal year 1911, including the 50 per cent additional taxes assessed, was	$29,432,255.43
Total corporation taxes assessed in fiscal year 1912, including the 50 per per cent additional taxes assessed, was	28,917,505.94
An apparent decrease of	514,749.49

This apparent decrease is accounted for by the fact that penalties, interest, and amounts paid in compromise of violations of the law are this year reported separately, while they were included in the amount reported for the fiscal year 1911. An actual decrease, however, did occur during the past fiscal year with respect to the 50 per cent additional tax assessed for failure to file returns within the period provided by law, the amounts being $90,518.88 for 1912, as compared with $323,221.20 assessed in 1911, showing a decrease of $232,702.32 in the penalties assessed during the year. The assessments made upon reports of agents are now covering the three years of the tax, and these reports will, under the provisions of the statute limiting the time within which investigations may be made, never cover more than three years.

The total number of corporations filing returns for 1911 is 288,352, which is 18,150 in excess of the number which made return for the calendar year 1910. The number of new corporations making return

is actually much larger than this, as the lists have been purged of many corporations which were not actually engaged in business in 1911 or ceased business for various reasons during the year 1910.

The 288,352 corporations rendering returns for the calendar year 1911 report a capital stock of $60,067,138,925.42. They report bonded and other indebtedness of $32,163,537,961.40 and an aggregate net income of $3,213,707,247.82. The increase in capital stock in 1911 over 1910 is $2,180,708,406.38, while the amount of bonded and other indebtedness shows an increase of $1,448,201,952.56. The net income reported shows a decrease of $146,543,394.83.

The 32,347 corporations listed in class A, which embraces all incorporated financial institutions and insurance companies, report an aggregate net income equivalent to 15.84 per cent on the capital stock reported. Included in this list, however, are many insurance companies which have no or only a nominal capital stock.

The 24,924 corporations listed in class B, which embraces all public service corporations, such as transportation companies, heating and lighting companies, report an aggregate net income equivalent to 4.17 per cent on the capital stock reported.

The 92,737 corporations in class C, which embraces industrial and manufacturing concerns, report a net income equivalent to 4.80 per cent on the capital stock reported.

The 62,670 corporations in class D, which embraces all mercantile corporations not otherwise classed as producers or manufacturers, report a net income equivalent to 10.13 per cent on the capital stock reported.

The 75,674 corporations in class E, which includes such miscellaneous corporations as are not otherwise classed, report a net income equivalent to 3.97 per cent on the capital stock reported.

The total number of returns filed for 1911 was 288,352, while the number of corporations having a net income in excess of $5,000 was 55,129, or 19.11 per cent. The percentage of such corporations differs in accordance with the class. In class A 10,993, or 33.98 per cent of the corporations making returns, report net incomes of $5,000 or over; in class B 4,545, or 18.23 per cent; in class C 18,995, or 20.48 per cent; in class D 12,235, or 19.52 per cent; and in class E 8,361, or 11.04 per cent.

With respect to the work of investigation during the past fiscal year several new centers of population have received attention with excellent results. The principal large cities in which heretofore no systematic investigations had been made and which are now receiving attention are St. Louis, Chicago, Los Angeles, and San Francisco. The work of investigation has also been instituted in Portland, Oreg., Detroit, Mich., Buffalo, N. Y., and other cities of lesser note in various sections of the United States, and the work has been continued in all the large centers of the East. Much work remains to be done, and the lack of sufficient appropriation to employ an adequate number of agents will necessarily curtail the number of examinations which might be made with much benefit to the Government, not only in the way of revenue for the present year, but for the future, because if unauthorized deductions are now being made they will continue to be made until there is investigation and detection thereof. Every effort is now being put forth to verify as many of the 1909 returns as is possible before March 1, 1913, which is the limit of time allowed

by the law for making investigations, except in those cases in which an extension of time was obtained within which to file the 1909 returns, which extension is limited by law to not more than 30 days from the 1st day of March. It is believed that with a larger force on the work much additional tax could be secured, and in view of the investigations already made it may be stated that the inquiries made by the internal-revenue agents have resulted uniformly in a better understanding between the bureau and the corporations.

The amount of tax assessed during the year 1912, while less than the amount assessed in 1911, is in excess of the amount which it was estimated would be assessed taking into consideration the general business conditions of 1911. It will be noted that the number of returns filed is largely in excess of the number filed for the previous years, and this is accounted for in two ways; one the natural increase in the number of corporations doing business, and the other the result of the rigid enforcement of the requirement that "every corporation subject to the tax shall make a return, regardless of the fact that it may not have any income or an income less than $5,000." A large number of small corporations, or those practically dormant, apparently neglected to make returns heretofore because of their belief that a return was not necessary where the earnings of the corporation were not sufficient on which to base a tax. It is also evident that the natural increase in the number of corporations doing business is very great and under present business conditions this increase is liable to continue and the natural consequence should be that the special excise tax on corporations will become a source of constantly increasing revenues.

During the past year many important questions relating to the ascertainment of net income have been considered and disposed of. A few of the more intricate questions have been taken to the courts for judicial determination. None of these, however, have at this time been finally determined. In general, the administration of the law would appear to have settled down to an established basis, and the large amount of revenue is being collected at an astonishingly small cost and with an absence of opposition from or friction with the taxpayers, which is most gratifying. One phase of the special tax on corporations is having most wholesome effect on the commercial world, which effect will be steadily increased. In order to make the return required by law it is necessary for the officers of every corporation to record every transaction of the corporation, and in order for the return to be true and accurate the books of the company making the return must be true and accurate. The fact that the Bureau of Internal Revenue is constantly checking up returns constantly tends to secure this result more and more accurately, and the fact that the returns have to be sworn to and that any discrepancy between such report and the books of the corporation making the return has to be accounted for, with heavy penalties impending for false or fraudulent returns and liability to additional tax for incorrect returns, together with the high value attached to such sworn returns as evidence in bankruptcy, wrongful use of the mails, fraud cases, etc., altogether make a high incentive for a corporation to keep correct records, and furnishes powerful assistance in detecting and punishing the promoters of "get-rich-quick" and other fraudulent and stock-jobbing concerns. Should each corporation be required to make its

return at the close of its own fiscal year, as the balance sheet of the corporation would in all cases have to agree with the return, the benefits of this phase of the law would be still further increased.

The officers in the field as well as those in the bureau in Washington have become more accustomed to their duties with the natural result that increased efficiency has been shown in both places.

The number of corporations which neglected to file their 1911 returns on or before the 1st day of March, 1912, as required by section 38 of the act of August 5, 1909, has been reduced very much when compared with the 1910 returns, probably not more than five thousand being delinquent in this respect. It is hoped that in future this number will be still further reduced.

OLEOMARGARINE.

During the fiscal year ended June 30, 1912, there were produced 122,365,414 pounds of uncolored and 6,235,639 pounds of colored oleomargarine, as against 115,331,800 pounds and 5,830,995 pounds, respectively, in the fiscal year 1911, or an increase of 7,033,614 pounds of uncolored and 404,644 pounds of colored product, making a total increase of 7,438,258 pounds of both classes.

The total production for 1912 was 128,601,053 pounds, being 13,261,227 pounds less than the quantity produced during 1910, which was the high-water mark since the enactment of the present law, with 141,862,280 pounds produced. The withdrawals tax paid in 1912 amounted to 121,945,038 pounds of uncolored and 3,174,331 pounds of colored product, or a total of 125,119,169 pounds, as compared with 115,448,006 pounds uncolored and 2,764,971 pounds of colored, a total of 118,212,977 pounds, tax paid during 1911, an increase of 6,497,032 pounds at one-fourth cent, and 410,360 pounds at rate of 10 cents, or a total increase of 6,907,392 pounds.

There was an increase of 14,410 pounds in the withdrawals of the uncolored product for export, and a decrease of 10,222 pounds in the colored product, or a net increase of 4,188 pounds over the previous year.

The total collections from all oleomargarine sources amounted to $1,128,707.25 as against $1,000,214.79, an increase of $128,492.46 over collections in 1911. Of this amount $24,925 was from special taxes of manufacturers; $23,258.50 from special taxes of retail dealers, at the higher rate; $271,145.74 from retail special taxes at the lower rate; $4,466.67 from wholesale special taxes at the higher rate; $171,475.45 from wholesale special taxes at the lower rate; $325,-948.33 stamp tax at 10 cents per pound; $307,479.16 [illegible] one-fourth cent per pound, and $8.40 on imported [illegible] the rate of 15 cents per pound.

A slight decrease is noted in the number [illegible] margarine law reported in 1912, there [illegible] reported, as against a total of 1,816 [illegible] involve 1,584 persons or offenders, [illegible] turers, 73 wholesale dealers, and [illegible] prosecutions were instituted a[illegible] sale dealers, and 26 retail de[illegible] turers, 1 wholesale, and [illegible] cases, together with th[illegible] pending before the cou[illegible]

Twenty manufacturers, 15 wholesale, and 91 retail dealers, a total of 126 cases. The remaining cases were compromised or dropped on the recommendation of the officers, or because of insufficient evidence for criminal action. A total of $1,653.10 was collected from fines imposed by the courts, $21,374.07 from compromises, $43,402.06 from assessment of special taxes, and $90,625.32 from stamp tax, making a total of $157,054.55 collected on account of these violations.

Attention has been called heretofore to the necessity of remedial legislation to strengthen the administrative features of this law; and in the report for 1911, pages 16 to 19, there was pointed out the method whereby the law was being evaded and the difficulty of an effective enforcement thereof, all of which is equally true at this time; and it is hoped that at this session Congress will make the necessary revision of these laws.

ADULTERATED BUTTER.

During 1912 there were reported 132 cases of manufacture of adulterated butter, 11 of wholesale, and 18 of retail dealers in this product, making a total of 161 violations of the act of May 9, 1902, practically all of which were due to the manufacture and sale of butter containing abnormal moisture without payment of special and stamp taxes. The total collections from this source amounted to only $46,102.40, which is a decrease from the previous year.

As pointed out in the report for fiscal year 1911, the moisture content is not a fair test as to adulteration; and it is again recommended that Congress amend the law along the lines set forth in that report, to establish a butter-fat standard, and to relieve manufacturers and dealers of the heavy and, oftentimes, destructive special taxes incurred under the present law through the accidental incorporation of excessive moisture and the unintentional sale of the product.

It is also recommended that the law be so amended that butter be not required to be branded "adulterated" which contains ingredients bringing it within this classification, where manufactured upon orders and specifications from customers for export to foreign countries, provided it is not deemed to be adulterated nor misbranded under the laws or regulations of the countries to which exportation is made. This would harmonize the internal revenue act of May 9, 1902, with the pure food and drugs act of June 30, 1906, and give to the American exporters of this product equal privileges and opportunities with foreign manufacturers in the tropical trade, which necessitates the use of certain chemicals and preservatives in butter, which under the law [illegible] product within the classification of adulterated butter and [illegible]o branded.

[illegible]uld also create a greater demand for farmers' [illegible]fore been extensively used in the manufac- [illegible] butter for the Tropics, and would in no [illegible]f the product on the domestic market, [illegible]rted under bond and official super-

[illegible]ED CHEESE.

[illegible] production of renovated [illegible]46,387,398 pounds pro- [illegible]l, as against 39,292,591

pounds and 39,352,445 pounds, respectively, during 1911, being 7,094,807 pounds and 7,061,450 pounds in these items.

A small quantity of filled cheese was produced during the year, all of which was exported taxpaid.

Attention is called to the fact that the laws imposing a tax upon and regulating the manufacture of process or renovated butter and filled cheese make no provision for the withdrawal of these products free of tax for export to a foreign country, as is the case with all other articles taxed under the internal-revenue laws, and it would seem only proper that these acts should be amended to extend this privilege to the manufacturers of these two products.

OPIUM.

In the annual report for the fiscal year ended June 30, 1911, the necessity for revision of the laws relating to the manufacture and sale of opium was discussed at length. The internal-revenue officers have been proceeding vigorously, as far as the present laws will permit, during the past fiscal year, and it is desired that the statements and recommendations contained in the previous report shall be considered as herein repeated.

CHEMISTRY.

During the past fiscal year the work of the Division of Chemistry has been considerably extended. The number of samples of oleomargarine and butter received during the year has decreased, while the number of various other samples show a very marked increase over last year. Prior to the last year the butter and oleomargarine work constituted about 75 per cent of the work done in the laboratory. During the past fiscal year butter and oleomargarine work constituted only 25 per cent of the work done. Artificial coloration and substitution of whisky by the rectifiers has decreased throughout the country to a marked degree, thus making a decreased amount of work in the laboratory on this account.

The opium work of the laboratory has increased to a large extent, calling for a large amount of analytical and court work for the division. The analysis of opium and its derivatives calls for a great deal of time and the constant presence of the chemist doing the test.

One of the most important divisions of the work of the laboratory is the handling of the fermentology reports, known as Form 88. The laboratory, in collaboration with these reports, has examined great numbers of samples of beer taken in various stages of fermentation at the distilleries, and in many cases irregularities indicated by these reports have been corroborated and corrections made in surveys, while in many other cases the distilleries in question have been put under surveillance, and numbers of cases of seizures of distilleries being operated illicitly have followed. As a result of this work a number of "pirate" plants throughout the country have closed down, and this work has, in addition, proved of considerable assistance to the legitimate manufacturers, and has resulted in improved conditions and yields at many distilleries, with increased revenue to the Government and great benefit to the legitimate manufacturers in preventing unfair competition.

Since the beginning of this method of control the average yield throughout the entire United States was 4.59 gallons per bushel of grain in 1912, as compared with 4.54 gallons per bushel of grain in 1910. In two districts, however, in which much fraud has prevailed, with respect to the manufacture and sale of distilled spirits, the yield increased in one district from 3.52 gallons per bushel of grain in 1910 to 3.99 gallons per bushel of grain in 1912, a gain in revenue on the grain reported used of approximately $125,000 per annum and in the other district the yield was increased from 3.60 gallons per bushel of grain in 1910 to 3.94 gallons per bushel of grain in 1912, a gain of approximately $50,000 per annum in revenue on the grain reported used; and in addition to that the fraudulent removals of nontax-paid whisky were greatly reduced.

In addition, the Bureau was enabled to detect a number of frauds, the plants being seized and the individuals concerned prosecuted, a number of convictions following.

The particular work, with respect to these fermentology records, was begun some two years ago, and the bureau is elated over the results obtained in so short a time, which have been far beyond expectations, and it is believed that as further experience in this work is gained still greater strides will be made toward scientific control of distilleries and the collection of all the tax due the Government with a minimum of friction and inconvenience to the legitimate taxpayer.

The following statement shows the number and character of samples received and analyzed during the fiscal year ended June 30, 1912:

Oleomargarine	570
Butter	1,942
Distilled spirits	544
Fermented beverages other than wines	264
Wines	236
Medicinal preparations	123
Oils	35
Brandy mashes	83
Distillery beer and spent beer	841
Opium	248
Miscellaneous	79
Total	4,965
Decrease under last year	739

CLAIMS.

At the beginning of the fiscal year ended June 30, 1912, there were on hand 1,785 claims of all kinds, amounting to $4,197,761.26. There were received during that year 8,128 claims, aggregating $3,622,838.22. During the year 9,373 claims of all kinds were disposed of, amounting to $6,614,263.49, leaving outstanding on July 1, 1912, 540 claims of all kinds for an aggregate of $1,206,335.99.

During that fiscal year 666 legacy claims, amounting to $3,502,168.61, were rejected under the decision of the Supreme Court in the case of Fidelity Trust Co. *vs.* United States. The legacy claims outstanding at the beginning of the year were practically all disposed of, a few being allowed in part under the Vanderbilt decision, but the great majority were rejected under the decision of the Supreme Court above noted.

In the same period there were received 568 claims for the abatement of special excise tax on corporations amounting to $617,494.68, of which number 363 claims were allowed, in part or whole, amounting to $160,279, and 146 claims were rejected to the aggregate amount of $362,250.62. One thousand two hundred and nineteen claims for the refunding of special excise tax, amounting to $1,907,962.32, were received during the fiscal year. There were allowed, in part or whole, 702 excise claims for refund, amounting to $209,723.10, and 575 such claims, aggregating $1,070,059.55, were rejected.

* * * * * * *

Respectfully,

ROYAL E. CABELL,
Commissioner of Internal Revenue.

Hon. FRANKLIN MACVEAGH,
Secretary of the Treasury.

REPORT OF THE REGISTER OF THE TREASURY.

TREASURY DEPARTMENT,
OFFICE OF THE REGISTER,
Washington, D. C., August 15, 1912.

SIR: I have the honor to make the following report of the business transacted in this office during the fiscal year ended June 30, 1912:

NUMBER AND AMOUNT OF BONDS RECEIVED, EXAMINED, ENTERED, SEALED, AND SIGNED IN THE OFFICE OF THE REGISTER OF THE TREASURY DURING THE FISCAL YEAR ENDED JUNE 30, 1912.

	Number.	Amount.
Registered	69,667	$131,925,700
Coupon	35,384	31,330,500
Total	105,051	163,256,200

NUMBER AND AMOUNT OF BONDS CANCELED IN THE OFFICE OF THE REGISTER OF THE TREASURY DURING THE FISCAL YEAR ENDED JUNE 30, 1912.

	Number.	Amount.
Registered	34,661	$97,510,880
Coupon	19,336	16,583,180
Total	53,997	114,094,060

REGISTERED BONDS REDEEMED DURING THE FISCAL YEAR ENDED JUNE 30, 1912.

Loan.	Total issue.	Redeemed during the year.		Total redeemed to June 30, 1912.	Outstanding.
		Number.	Amount.		
UNITED STATES LOANS.					
Funded loan of 1891, 4½ per cent	$209,383,900	.....	.....	$209,379,450	$4,450
Funded loan of 1891, 4½ per cent continued at 2 per cent	25,110,400	2	$2,000	25,105,400	5,000
Loan of 1904, 5 per cent	75,399,250	1	100	75,399,050	200
Funded loan of 1907, 4 per cent	660,395,650	50	61,850	660,200,150	195,500
Total	970,289,200	53	63,950	970,084,050	205,150
DISTRICT OF COLUMBIA LOAN.					
Fifty-year funded loan of 1924, 3.65 per cent	14,084,000	137	629,000	6,273,00	7,811,000

COUPON BONDS REDEEMED DURING THE FISCAL YEAR ENDED JUNE 30, 1912.

Loan.	Total issue.	Redeemed during the year.		Total canceled to June 30, 1912.	Outstanding.
		Number.	Amount.		
UNITED STATES LOANS.					
Funded loan of 1904, 5 per cent	$63,310,050	1	$100	$63,297,000	$13,050
Funded loan of 1907, 4 per cent	329,998,300	196	54,350	329,393,450	604,850
Total	393,308,350	197	54,455	392,690,450	617,900
DISTRICT OF COLUMBIA LOAN.					
Fifty-year funded loan of 1924, 3.65 per cent	14,251,800	4	650	13,804,250	447,550

REGISTERED BONDS OUTSTANDING JUNE 30, 1912.

Loan.	$20	$50	$100	$500	$1,000	$5,000	$10,000	$50,000	Total outstanding.
Consols of 1930, 2 per cent		$121,950	$873,100	$3,518,000	$25,099,000	$55,105,000	$465,910,000	$91,700,000	$642,327,050
Loan of 1908–1918, 3 per cent	$96,820		1,245,800	3,667,500	7,884,000	4,335,000	26,820,000		44,049,120
Loan of 1925, 4 per cent		13,400	325,600	1,286,000	9,557,000	8,620,000	80,360,000		100,162,000
Panama Canal loan, 2 per cent, series of 1906	5,840		178,400		5,683,000		48,740,000		54,607,240
Panama Canal loan, 2 per cent, series of 1908	1,520		69,400		2,418,000		27,170,000		29,658,920
Panama Canal loan, 3 per cent, series of 1911			57,600	303,500	32,682,000				33,043,100
Postal savings fund loan of 1911–1931, 2½ per cent, first series	1,740		21,300	14,000					37,040
Postal savings fund loan of 1912–1932, 2½ per cent, second series	13,440		226,500	76,500					316,440
Philippine loan of 1914–1934, land purchase, 4 per cent					2,060,000		4,940,000		7,000,000
Philippine loan of 1915–1935, public improvements, 4 per cent, first series					720,000		1,780,000		2,500,000
Philippine loan of 1916–1936, public improvements, 4 per cent, second series					130,000		870,000		1,000,000
Philippine loan of 1919–1939, public improvements, 4 per cent, third series					1,500,000				1,500,000
City of Manila sewer and water loan of 1915–1935, 4 per cent, first series					220,000		780,000		1,000,000
City of Manila sewer and water loan of 1917–1937, 4 per cent, second series					170,000		1,830,000		2,000,000
City of Manila sewer and water loan of 1918–1938, 4 per cent, third series					1,000,000				1,000,000
City of Cebu loan of 1921–1941, 4 per cent					125,000				125,000
Porto Rico gold loan of 1910, 4 per cent						425,000			425,000
District of Columbia 50-year funded loan of 1924, 3.65 per cent					506,000	7,305,000			7,811,000
Total	119,360	135,350	2,997,700	8,865,500	89,754,000	75,790,000	659,200,000	91,700,000	928,561,910

United States loans	$904,200,910
Insular possessions loans	16,550,000
District of Columbia loan	7,811,000
Total	928,561,910

Active Loans—Coupon Bonds Outstanding June 30, 1912.

Loan.	$20	$50	$100	$500	$1,000	Total outstanding.
Consols of 1930, 2 per cent	.....	$11,300	$101,300	$381,500	$3,429,000	$3,923,100
Loan of 1908–1918, 3 per cent	$321,840	.....	2,214,000	11,085,500	6,275,000	19,896,340
Loan of 1925, 4 per cent	.....	32,200	224,200	789,500	17,282,000	18,327,900
Panama Canal loan, 2 per cent, series of 1906	1,940	.....	1,800	.....	21,000	24,740
Panama Canal loan, 2 per cent, series of 1908	380	.....	5,700	.....	335,000	341,080
Panama Canal loan, 3 per cent, series of 1911	.....	.....	164,900	753,000	16,039,000	16,956,900
Postal Savings fund, loan of 1911–1931, 2½ per cent, first series	860	.....	2,500	1,500	.....	4,860
Postal Savings fund, loan of 1912–1932, 2½ per cent, second series	10,440	.....	72,000	18,500	.....	100,940
District of Columbia fifty-year funded loan of 1924, 3.65 per cent	.....	30,550	.....	417,000	.....	447,550
Total	335,460	74,050	2,786,400	13,446,500	43,381,000	60,023,410

United States loans	$59,575,860
District of Columbia loan	447,550
Total	60,023,410

Debt on which Interest Has Ceased since Maturity.

Old debt:	
Six per cent stock of 1790	$27,869.77
Deferred six per cent stock of 1790	13,934.90
Three per cent stock of 1790	13,953.13
Navy six per cent stock	100.00
Eight per cent loan of 1800	500.00
Sixteen-million loan of 1813	46.39
Ten-million loan of 1814	288.98
Mississippi stock	846.78
Seven per cent stock of 1815	32.52
Treasury note stock of 1815	67.53
Temporary loan	2,850.00
Certificates of indebtedness	3,000.00
Three per cent certificates	5,000.00
Treasury notes prior to 1846	82,415.35
Treasury notes of 1846	5,900.00
Treasury notes of 1847	950.00
Treasury notes of 1857	700.00
Treasury notes of 1861	2,300.00
Seven-thirties of 1861	9,350.00
Seven-thirties of 1864 and 1865	120,100.00
One-year notes of 1863	30,360.00
Two-year notes of 1863	26,850.00
Compound-interest notes	159,230.00
Bounty-land scrip	2,900.00
Texan-indemnity stock	20,000.00
Mexican indemnity	1,104.91
Oregon war debt	2,250.00
Loan of 1847	950.00
Loan of 1858	2,000.00
Loan of 1860	.....
Loan of February, 1861 (1881's)	5,000.00
Loan of July and August, 1861 (called)	15,050.00
Loan of July and August, 1861 continued at 3½ per cent (called)	1,600.00
Five-twenties of 1862 (called)	107,150.00
Loan of 1863 (1881's)	3,100.00
Loan of 1863, continued at 3½ per cent (called)	100.00
Ten-forties of 1864 (called)	18,650.00
Five-twenties of 1864 (called)	14,000.00
Five-twenties of 1865 (called)	19,850.00
Consols of 1865 (called)	57,450.00
Consols of 1867 (called)	93,800.00
Consols of 1868 (called)	9,900.00
Funded loan of 1881 (called)	22,400.00
Funded loan of 1881, continued at 3½ per cent (called)	50.00
Loan of July 12, 1882, three per cents (called)	200.00
Funded loan of 1891 (called)	23,650.00
Funded loan of 1891, continued at 2 per cent (called)	5,000.00
Loan of 1904 (called)	13,250.00
Funded loan of 1907 (called)	800,350.00
Refunding certificates (called)	14,050.00
	1,760,450.26

COUPON BONDS.

During the year there were received, counted, entered in blotters, transferred to numerical registers, and examined 18,829 coupon bonds, amounting to $16,015,600 which, added to the coupon bonds on file at the beginning of the year, give an aggregate of 110,844, amounting to $57,792,490 on file in this division at the close of the fiscal year ended June 30, 1912.

COUPON BONDS RECEIVED, ENTERED IN BLOTTERS, TRANSFERRED TO NUMERICAL REGISTERS, AND EXAMINED DURING THE YEAR.

Loan.	Number of bonds.	Amount.
UNITED STATES LOANS.		
Five-twenties of 1862, 6 per cent, first series, redemptions	1	$100
Five-twenties of 1862, 6 per cent, third series, redemptions	1	1,000
Consols of 1865, 6 per cent, second series, redemptions	4	2,100
Consols of 1867, 6 per cent, third series, redemptions	1	500
Funded loan of 1907, 4 per cent, redemptions	400	174,350
Loan of 1904, 5 per cent, redemptions	1	100
Loan of 1925, 4 per cent, exchanges	1,156	1,097,800
Loan of 1908–1918, 3 per cent, exchanges	2,617	668,480
Consols of 1930, 2 per cent, exchanges	358	310,450
Panama Canal loan, 2 per cent, series of 1906, exchanges	1	1,000
Panama Canal loan, 2 per cent, series of 1908, exchanges	23	23,000
Panama Canal loan, 3 per cent, series of 1961, exchanges	14,104	13,661,600
Panama Canal loan, 3 per cent, series of 1961, transfers	30	30,000
Postal savings fund loan, 2½ per cent, first series, exchanges	19	1,100
Postal savings fund loan, 2½ per cent, second series, exchanges	13	1,220
DISTRICT OF COLUMBIA LOANS.		
Fifty-year funded loan of 1924, 3.65 per cent, exchanges	93	42,000
Fifty-year funded loan of 1924, 3.65 per cent, redemptions	7	800
Total	18,829	16,015,600

COUPONS.

The number of redeemed detached coupons received during the year was 487,979, amounting to $1,945,040.72; the number arranged numerically, 496,750; the number entered in numerical registers, 395,941; the number examined to verify registration, 226,463; the number strapped with wire for final filing, 305,576.

During the year there were 103,250,868 redeemed detached coupons, amounting to $1,237,342,994.30¾ turned over to the department destruction committee and destroyed, leaving on file at the close of the year 13,078,172 coupons, amounting to $56,499,243.51.

REDEEMED DETACHED COUPONS RECEIVED DURING THE YEAR.

Loan.	Number.	Amount.
UNITED STATES LOANS.		
Five-twenties of 1862, 6 per cent, first series	3	$31.50
Five-twenties of 1862, 6 per cent, second series	3	31.50
Five-twenties of 1862, 6 per cent, third series	1	3.00
Seven-thirties of 1864–1865, 7.3 per cent, first series	5	9.12
Seven-thirties of 1864–1865, 7.3 per cent, second series	1	3.65
Five-twenties of 1865, 6 per cent, first series	1	15.00
Consols of 1865, 6 per cent, second series	15	336.00
Consols of 1867, 6 per cent, third series	4	120.00

REDEEMED DETACHED COUPONS RECEIVED DURING THE YEAR—Continued.

Loan.	Number.	Amount.
UNITED STATES LOANS—continued.		
Consols of 1868, 6 per cent, fourth series	4	$7.50
Consols of 1907, 4 per cent	1,972	3,597.50
Loan of 1904, 5 per cent	2	13.13
Loan of 1925, 4 per cent	108,432	921,691.50
Loan of 1908–1918, 3 per cent	320,407	720,489.60
Consols of 1930, 2 per cent	24,831	91,959.50
Panama Canal loan, 2 per cent, series of 1906	558	621.00
Panama Canal loan, 2 per cent, series of 1908	2,069	8,737.10
Panama Canal loan, 2 per cent, series of 1961	26,497	180,704.25
Postal savings fund loan, 2½ per cent	28	35.00
DISTRICT OF COLUMBIA LOANS.		
Fifty-year funded loan of 1924, 3.65 per cent	3,146	16,634.87
Total	487,979	1,945,040.72

REDEEMED DETACHED COUPONS DELIVERED TO THE DEPARTMENT DESTRUCTION COMMITTEE AND DESTROYED DURING THE FISCAL YEAR ENDED JUNE 30, 1912.

Loan.	Number.	Amount.
UNITED STATES LOANS.		
Loan of 1842, 6 per cent	42,268	$1,994,580.00
Loan of 1843, 5 per cent	26,657	860,925.00
Loan of 1848, 6 per cent	222,212	7,664,010.00
Texan indemnity stock, 5 per cent	107,805	2,695,125.00
Loan of 1858, 5 per cent	473,894	11,847,350.00
Loan of 1860, 5 per cent	26,318	657,950.00
Loan of February, 1861, 6 per cent	216,378	6,491,340.00
Oregon war debt, 6 per cent	123,553	1,758,128.00
Loan of July and August, 1861, 6 per cent	3,500,600	73,246,831.50
Seven-thirties of 1861, 7.3 per cent	2,326,771	23,652,537.42½
Five-twenties of 1862, 6 per cent, all series	15,300,413	238,352,643.00
Loan of 1863, 6 per cent	1,076,892	23,128,509.50
Two-year Treasury notes of 1863, 5 per cent	879,200	7,169,497.50
Ten-forties of 1864, 5 per cent	2,648,034	46,502,867.00
Five-twenties of June, 1864, 6 per cent	1,598,059	32,669,174.50
Seven-thirties of 1864–65, 7.3 per cent, all series	12,835,354	123,329,957.41½
Five-twenties of 1865, 6 per cent, first series	3,516,864	82,293,850.50
Consols of 1865, 6 per cent, second series	8,181,916	121,054,302.50
Consols of 1867, 6 per cent, third series	11,669,875	161,043,769.00
Consols of 1868, 6 per cent, fourth series	1,283,491	16,336,935.50
Certificates of indebtedness of 1870, 4 per cent	6,102	122,040.00
Funded loan of 1881, 5 per cent	10,231,797	96,729,846.89
Funded loan of 1891, 4½ per cent	4,145,906	36,451,465.40
Funded loan of 1907, 4 per cent	20,223,152	94,908,431.00
Loan of 1904, 5 per cent	765,009	8,761,443.41
Loan of 1925, 4 per cent	828,272	7,460,398.50
DISTRICT OF COLUMBIA LOANS.		
Ten-year loan (Bowen), 6 per cent	3,099	16,821.00
Permanent improvement loan, 6 per cent	232,316	2,793,690.00
Water-stock loan, 7 per cent	15,311	535,885.00
Market-stock loan, 7 per cent	3,133	47,738.25
Twenty-year funded loan of 1892, 6 per cent	94,092	880,596.00
Thirty-year funded loan of 1902, 6 per cent	36,169	728,985.00
Permanent improvement loan, 7 per cent	29,727	547,627.50
Fifty-year funded loan of 1924, 3.65 per cent	538,413	3,615,985.49
Twenty-year funded loan of 1899, 5 per cent	25,457	572,030.00
Steam force-pump loan, 7.3 per cent	10	182.50
MISCELLANEOUS.		
Louisville & Portland Canal Co., 6 per cent	16,349	490,470.00
Total, number, and face value	103,250,868	1,237,413,919.28
Amount deducted at various times on account of fractional coupons		70,924.97½
Total amount paid in redemption		1,237,342,994.30½

INTEREST CHECKS.

There were received, counted, arranged, registered, and filed during the year 692 paid interest checks, amounting to $288,172.30.

The great reduction in receipts of paid interest checks in this office, as compared with previous years, was caused by checks of all current loans being transferred to the office of the Auditor for the Treasury Department in compliance with a recommendation of the Treasury Committee on Economy and Efficiency, approved by the Secretary of the Treasury.

Paid checks of the current loans to the number of 1,883,467, amounting to $191,851,708.25, were transferred during the year from the files of this division to those of the Auditor for the Treasury Department, leaving on file 4,751,333 checks of the various old matured loans, amounting to $857,026,328.84.

NUMBER AND AMOUNT OF PAID INTEREST CHECKS RECEIVED DURING THE YEAR.

Loan.	Number.	Amount.
UNITED STATES LOANS.		
Funded loan of 1881, 5 per cent, continued at 3½ per cent	2	$9.19
Loan of July 12, 1882, 3 per cent	1	1.87
Funded loan of 1891, 4½ per cent	9	143.99
Funded loan of 1907, 4 per cent	202	2,270.00
DISTRICT OF COLUMBIA LOANS.		
Fifty-year funded loan of 1924, 3.65 per cent	469	284,937.25
MISCELLANEOUS.		
Pacific railroads, 6 per cent	9	810.00
Total	692	288,172.30

NUMBER AND AMOUNT OF PAID INTEREST CHECKS TRANSFERRED TO THE OFFICE OF THE AUDITOR FOR THE TREASURY DEPARTMENT.

Loan.	Number.	Amount.
UNITED STATES LOANS.		
Loan of 1925, 4 per cent, including prepaid checks	220,518	$59,728,736.50
Loan of 1908–1918, 3 per cent	1,093,898	17,587,989.60
Loan of 1908–1918, 3 per cent, interest on deposits for bonds	218,957	200,426.10
Consols of 1930, 2 per cent, first interest dividends	179	28,351.25
Consols of 1930, 2 per cent, regular dividends, including prepaid checks	334,358	109,353,668.50
Panama Canal loan, 2 per cent, series of 1906	12,214	3,775,037.50
Panama Canal loan, 2 per cent, series of 1908	3,343	1,177,498.80
Total	1,883,467	191,851,708.25

UNITED STATES SEVEN-THIRTY TREASURY NOTES.

The following table shows the number and amount of redeemed and canceled United States seven-thirty Treasury notes on hand June 30, 1911, and the number and amount delivered to the department destruction committee and destroyed during the fiscal year ended June 30, 1912.

UNITED STATES SEVEN-THIRTY NOTES (ACT OF JULY 17, 1861).

	Number of notes.	Amount.
On hand June 30, 1911	485,557	$140,085,400
Destroyed	485,495	140,073,050
To be accounted for	62	12,350
In Treasury fair exhibit	5	6,650
In caveat cases, Secretary's office	13	2,350
Missing from files at time of destruction [1]	44	3,350
Total	62	12,350

UNITED STATES SEVEN-THIRTY NOTES (ACTS JUNE 30, 1864 AND MARCH 3, 1865, ALL SERIES).

On hand June 30, 1911	3,101,725	$829,872,300
Destroyed	3,101,699	829,841,850
To be accounted for	26	30,450
In Treasury fair exhibit	7	6,800
In caveat cases, Secretary's office	11	6,900
In specimen book	5	6,650
Missing from files at time of destruction [1]	3	10,100
Total	26	30,450

[1] There is no possibility of a repayment of these notes by the Government as they are all thoroughly canceled and a memorandum has been entered upon the records against each particular note.

GOLD CERTIFICATES.

During the year, of the gold certificates of the act of March 3, 1863, series of 1871, payable to order, there were received, examined, registered, and filed, 1 certificate of $100 denomination, and of the same act, series of 1875, payable to order, there were received, examined, registered, and filed 2 certificates of $100 denomination, amounting to $200, making a total of 3 certificates, amounting to $300.

Of the issue of the act of March 14, 1900, series of 1900, payable to order, there were received, counted, examined, registered, and filed 7,099 certificates of $10,000 denomination, amounting to $70,990,000.

Gold certificates of the act of July 12, 1882, series of 1882, payable to bearer, are destroyed after redemption. The amount received and destroyed is shown in the tables of destruction of the currency.

CURRENCY.

During the year this division received, counted, examined, entered in journal and ledger, and prepared for destruction, the upper halves of the following described redeemed and canceled United States currency:

	Number.	Amounting to—
United States notes	5,359,490	$34,728,150.00
Treasury notes of 1890	20,982	148,165.00
Silver certificates	89,019,279	138,019,200.00
Gold certificates	2,836,657	53,745,700.00
Fractional currnecy	5,397	1,236.03
Total	97,241,805	226,642,451.03

AMOUNTS OF THE DIFFERENT CLASSES OF NOTES RECEIVED, COUNTED, EXAMINED AND DESTROYED DURING THE YEAR, AND TOTAL AMOUNT OF EACH CLASS REDEEMED AND DESTROYED TO JUNE 30, 1912.

	Received during the year.		Total amount redeemed to June 30, 1912.
	Transmitted by various banks and counted in Office of Register.	Transmitted by subtreasuries and counted in office of United States Treasury.	
Old demand notes			$59,976,717.50
United States notes	$34,728,150.00	$114,931,850.00	4,179,064,792.00
Treasury notes of 1890	148,165.00	168,835.00	444,506,000.00
Silver certificates	138,019,200.00	255,362,800.00	5,168,870,600.00
Gold certificates, act July 12, 1882, payable to bearer	53,745,700.00	173,577,300.00	1,723,645,111.00
Fractional currency notes	1,236.03		353,491,986.22
Four per cent refunding certificates payable to bearer	860.00		39,940,160.00
One-year Treasury notes of 1863	10.00		44,489,650.00
Two-year Treasury notes issued without coupons			16,473,100.00
Two-year Treasury notes issued with coupons			149,980,050.00
Compound-interest notes, act of Mar. 3, 1863			17,983,310.00
Compound-interest notes, act of June 30, 1864	70.00		248,452,720.00
Total	226,643,391.03	544,040,785.00	12,446,874,196.72

TOTAL AMOUNTS OF REDEEMED UNITED STATES SECURITIES AND CURRENCY RECEIVED, CANCELED AND DESTROYED TO JUNE 30, 1912.

Classification.	Amount.
United States coupon bonds [1]	$2,850,334,640.00
District of Columbia coupon bonds [1]	20,988,400.00
Louisville and Portland Canal Co. coupon bonds [1]	1,172,000.00
United States, District of Columbia, and Louisville and Portland Canal Co. redeemed detached coupons	1,237,342,994.30½
Seven-thirty Treasury notes, act of July 17, 1861	140,073,050.00
Seven-thirty Treasury notes, acts of June 30, 1864, and Mar. 3, 1865	829,841,850.00
One-year Treasury notes, act of Mar. 3, 1863	44,489,650.00
Two-year Treasury notes, act of Mar. 3, 1863	166,453,150.00
Three-year compound-interest notes, acts of Mar. 3, and June 30, 1864	266,436,030.00
Gold certificates, act of Mar. 3, 1863 (destruction ceased in 1873)	574,506,700.00
Gold certificates, act of July 12, 1882, payable to bearer	1,723,645,111.00
Silver certificates	5,168,870,600.00
Four per cent refunding certificates, act of Feb. 26, 1879, payable to bearer	39,940,160.00
Old demand notes	59,976,717.50
United States notes	4,179,064,792.00
Treasury notes of 1890	444,506,000.00
Fractional currency notes	353,491,986.22
Total	18,101,133,831.02½

[1] Not including bonds amounting to $428,560 destroyed statistically, but inadvertently included in last annual report.

ISSUE, REDEMPTION, AND OUTSTANDING OF VARIOUS OLD ISSUES OF THE GOVERNMENT AT THE CLOSE OF THE YEAR.

Issue.	Total issue.	Redeemed during the year.	Total redeemed to June 30, 1912.	Outstanding.
Coupon bonds:				
Texan indemnity stock, act of Sept. 9, 1850, 5 per cent	$5,000,000.00		$4,980,000.00	$20,000.00
Loan of 1858, act of June 14, 1858, 5 per cent	19,133,000.00		19,131,000.00	2,000.00
Loan of February, 1861, act of Feb. 8, 1861, 6 per cent	8,689,000.00		8,684,000.00	5,000.00
Oregon war debt, act of Mar. 2, 1861, 6 per cent	1,541,350.00		1,539,100.00	2,250.00
Loan of July and August, 1861, acts of July 17 and Aug. 5, 1861, 6 per cent	137,632,100.00		137,617,100.00	15,000.00

ISSUE, REDEMPTION, AND OUTSTANDING OF VARIOUS OLD ISSUES OF THE GOVERNMENT AT THE CLOSE OF THE YEAR—Continued.

Issue.	Total issue.	Redeemed during the year.	Total redeemed to June 30, 1912.	Outstanding.
Coupon bonds—Continued.				
Five-twenties of 1862, act of Feb. 25, 1862, 6 per cent, first series	$100,001,000.00	$100.00	$99,984,050.00	$16,950.00
Five-twenties of 1862, act of Feb. 25, 1862, 6 per cent, second series	100,000,000.00	.....	99,966,150.00	33,850.00
Five-twenties of 1862, act of Feb. 25, 1862, 6 per cent, third series	100,000,000.00	1,000.00	99,976,950.00	23,050.00
Five-twenties of 1862, act of Feb. 25, 1862, 6 per cent, fourth series	152,921,100.00	.....	152,887,800.00	33,300.00
Loan of 1863, act of Mar. 3, 1863, 6 per cent.	57,178,100.00	.....	57,175,100.00	3,000.00
Ten-forties of 1864, act of Mar. 3, 1864, 5 per cent	155,762,550.00	.....	155,743,950.00	18,600.00
Five-twenties of June, 1864, act of June 30, 1864, 6 per cent	115,530,300.00	.....	115,516,300.00	14,000.00
Five-twenties of 1865, act of Mar. 3, 1865, 6 per cent, first series (May and November)	178,786,200.00	.....	178,768,850.00	17,350.00
Consols of 1865, act of Mar. 3, 1865, 6 per cent, second series	282,511,650.00	2,100.00	282,455,200.00	56,450.00
Consols of 1867, act of Mar. 3, 1865, 6 per cent, third series	317,665,550.00	500.00	317,571,800.00	93,750.00
Consols of 1868, act of Mar. 3, 1865, 6 per cent, fourth series	37,483,500.00	.....	37,473,600.00	9,900.00
Funded loan of 1881, act of July 14, 1870, and Jan. 20, 1871, 5 per cent	353,895,850.00	.....	353,875,450.00	20,400.00
Funded loan of 1891, acts of July 14, 1870, and Jan. 20, 1871, 4½ per cent	120,478,850.00	.....	120,459,650.00	19,200.00
Loan of 1904, acts of July 14, 1870, and Jan. 14, 1875, 5 per cent	63,310,050.00	100.00	63,297,000.00	13,050.00
Total	2,307,520,150.00	3,800.00	2,307,103,050.00	417,100.00
Seven-thirty Treasury notes:				
Act of July 17, 1861	140,094,750.00	.....	140,085,400.00	9,350.00
Act of June 30, 1864, first series	299,992,500.00	.....	299,947,200.00	45,300.00
Act of Mar. 3, 1865, second series	331,000,000.00	.....	330,970,200.00	29,800.00
Act of Mar. 3, 1865, third series	199,000,000.00	.....	198,954,900.00	45,100.00
Total	970,087,250.00	.....	969,957,700.00	129,550.00
Certificates of indebtedness, acts of Mar. 1 and 17, 1862, and Mar. 3, 1863:				
First issue	498,593,241.65	.....	498,591,241.65	2,000.00
Second issue	63,160,000.00	.....	63,159,000.00	1,000.00
Total	561,753,241.65	.....	561,750,241.65	3,000.00
Three per cent certificates, acts of Mar. 2, 1867, and July 25, 1868	85,155,000.00	.....	85,150,000.00	5,000.00
Four per cent refunding certificates:				
Act of Feb. 26, 1879, payable to order	58,500.00	.....	58,480.00	20.00
Act of Feb. 26, 1879, payable to bearer	39,954,250.00	860.00	39,940,160.00	14,090.00
Total	40,012,750.00	860.00	39,998,640.00	14,110.00
Gold certificates, payable to order:				
Act of Mar. 3, 1863, first series	429,604,900.00	.....	429,597,920.00	6,980.00
Act of Mar. 3, 1863, Geneva award (special)	33,000,580.46	.....	33,000,580.46	.....
Act of Mar. 3, 1863, series of 1870	370,500,000.00	.....	370,480,500.00	19,500.00
Act of Mar. 3, 1863, series of 1871	5,000,000.00	100.00	4,999,200.00	800.00
Act of Mar. 3, 1863, series of 1875	143,029,400.00	200.00	143,007,200.00	22,200.00
Total	981,134,880.46	300.00	981,085,400.46	49,480.00
Gold certificates, payable to order:				
Act of July 12, 1882, series of 1888	189,185,000.00	.....	187,490,000.00	1,095,000.00
One-year Treasury notes of 1863, act of Mar. 3, 1863	44,520,000.00	10.00	44,489,650.00	30,350.00
Two-year Treasury notes of 1863:				
Act of Mar. 3, 1863, issued without coupons	16,480,000.00	.....	16,473,100.00	6,900.00
Act of Mar. 3, 1863, issued with coupons	150,000,000.00	.....	149,980,050.00	19,950.00
Total	166,480,000.00	.....	166,453,150.00	26,850.00

ISSUE, REDEMPTION, AND OUTSTANDING OF VARIOUS OLD ISSUES OF THE GOVERNMENT AT THE CLOSE OF THE YEAR—Continued.

Issue.	Total issue.	Redeemed during the year.	Total redeemed to June 30, 1912.	Outstanding.
Three-year, 6 per cent, compound-interest notes:				
Act of Mar. 3, 1863	$17,993,760.00	.....	$17,983,310.00	$10,450.00
Act of June 30, 1864	248,601,680.00	$70.00	248,452,720.00	148,960.00
Total	266,595,440.00	70.00	266,436,030.00	159,410.00
Old demand notes, acts of July 17 and Aug. 5, 1861, and Feb. 12, 1862	60,030,000.00	.....	59,976,717.50	53,282.50
Fractional currency notes, act of July 17, 1862, and subsequent acts	368,724,079.45	1,236.03	353,491,986.22	15,232,093.23

NOTE.—The Office of the Register of the Treasury is the last to receive the redeemed securities of the Government, and therefore the amounts reported as "redeemed" will be less than the actual redemptions by the amount in transit, and the amounts reported as "outstanding" correspondingly increased.

During the year there were received, recorded, and filed 514,602 redeemed securities, amounting to $18,720,103.02 making a total of 18,731,944 redeemed securities, amounting to $5,218,341,725.09¼ on file at the close of the fiscal year as shown by the following table:

CLASSIFICATION, TOTAL NUMBER, AND AMOUNT OF REDEEMED SECURITIES ON FILE IN THIS DIVISION JUNE 30, 1912.

Classification.	Number of redeemed securities.	Amount.
United States coupon bonds, various loans	109,299	$56,772,490.00
District of Columbia coupon bonds	1,545	1,020,000.00
United States redeemed detached coupons	12,987,747	55,577,307.68½
District of Columbia redeemed detached coupons	75,844	629,513.30
Gold certificates, act of Mar. 3, 1863, old series payable to order	194,912	406,578,700.46
Gold certificates, act of July 12, 1882, series of 1888, payable to order	24,313	187,490,000.00
Gold certificates, act of Mar. 14, 1900, series of 1900, payable to order	82,121	821,210,000.00
Certificates of deposit (currency), act of June 8, 1872	157,956	1,473,625,000.00
Certificates of deposit, temporary loan of Feb. 25, 1862	81,829	710,775,300.75
Certificates of indebtedness of 1870, act of July 8, 1870	679	678,362.41
Certificates of indebtedness, acts of Mar. 1, and 17, 1862, and Mar. 3, 1863	247,088	561,750,241.65
Three per cent certificates, acts of Mar. 2, 1867 and July 25, 1868	11,430	85,150,000.00
Four per cent refunding certificates, act of Feb. 26, 1879, payable to order	5,848	58,480.00
Redeemed interest checks, United States registered bonds	4,659,950	780,207,509.99
Redeemed interest checks, District of Columbia registered bonds	26,810	15,215,799.96
Redeemed interest checks, Pacific Railroad registered bonds	63,124	60,314,359.68
Redeemed interest checks, Spanish indemnity certificates	1,372	425,459.21
Redeemed interest checks, Cherokee land certificates	77	863,200.00
Total	18,731,944	5,218,341,725.09¼

SEAL OF THE TREASURY DEPARTMENT.

As it required considerable research to trace the history of the seal of the Treasury Department, and as the information obtained is, in my opinion, sufficiently valuable to be preserved in the records of the department, I have for these reasons included it in this report.

A committee was appointed by the Continental Congress, September 26, 1778, to devise a seal for the Treasury. There were three members, John Witherspoon, Gouverneur Morris, and R. H. Lee. In the Journals of Congress for the same date is a resolution from which the following references to the seal were taken:

Resolved: That the Comptroller shall keep the Treasury books and seal and file all accounts * * * shall draw bills under said seal * * *

No reference to any report from this committee is to be found in the publications of the Continental Congress, so the date can not be given of its adoption but impressions of the Continental seal have been found on documents dated 1782. When the present form of government was instituted in 1789 the Treasury seal of the Confederation was continued in use and is found on papers issued in the latter part of the 18th century.

Chapter 61, section 3, of the Statutes at Large for 1849 is as follows:

And be it further enacted, That all books, papers, documents, and records in the War, Navy, Treasury, and Post Office Departments, and the Attorney General's Office may be copied and certified under seal in the same manner as those in the State Department may now be by law, and with the same force and effect, and the Attorney General shall cause a seal to be made and provided for his office, with such device as the President of the United States shall approve.

It is probably due to this legislation that the old seal of the Continental period was replaced in 1849 by another cut in cast steel by Edward Stabler of Montgomery County, Md. He was ordered to make a fac simile of the old one, which was nearly worn out. Mr. Stabler suggested some minor improvements, but was informed that the design must be copied exactly in accordance with the law. However, on comparing an impression from the Continental seal taken in 1816 with one from the seal now in use a slight difference in the wreaths on the sides of the shield is to be found and tiny dots have been introduced on what was at the previous date blank space about the principal features within the shield. Lossing, in an article in Harper's Magazine of February, 1869, entitled "Executive departments and seals," gives a drawing of an impression made in 1782 which had no dottings and had the wreaths exactly like those on the papers sealed in 1816. The diameter of the seal now in use is one-eighth inch greater than that of the Continental seal. But these differences are so minute that the casual observer would never notice them. In all essential features they are the same, so that the design of the seal of the Treasury Department is older than the National Government.

The symbols introduced into the seal are all easily explained. The 13 stars represent the 13 original colonies. Justice, the blind goddess holding the balance, has always been a favorite with the devisers of State seals. The very first design submitted for the Great Seal of the United States had this device in full, but was omitted entirely from the one finally adopted. The designers of our Treasury seal used the balance alone as an emblem of Justice.

Keys, in secular heraldry, have been used from remote antiquity to denote offices of state.

The legend on the seal is "Thesaur. Amer. Septent. Sigil." being an abbreviation of the Latin "Thesauri Americæ Septentrionalis Sigillum," meaning "The seal of the Treasury of North America."

NEW DIVISION RECOMMENDED.

While there are practically two divisions in this bureau, that of Loans and that of Notes, Coupons, and Currency, there is only one chief of division. I therefore respectfully renew my recommendation of last year that another division be constituted and that a chief thereof be designated.

Respectfully submitted.

J. C. NAPIER, *Register.*

The SECRETARY OF THE TREASURY.

ABSTRACTS OF REPORTS OF BUREAUS AND DIVISIONS.

The following is a summary of the reports of other bureaus and divisions of the Treasury Department for the fiscal year ended June 30, 1912, with the exception that the figures in relation to public moneys and loans and currency are brought to November 1:

MINT SERVICE.

Operations of the mints.

The original deposits of gold at all of the offices of the Mint Service during the fiscal year 1912 amounted to $151,929,883. The total coinage of the year amounted to $24,567,835.40, of which $12,749,090 was gold, $9,655,405.25 was silver, $1,392,188.20 was nickel, and $771,151.95 was bronze. The purchases of silver during the year amounted to 4,803,668.32 fine ounces, at an average cost of 57.3 cents per ounce. The seigniorage on subsidiary silver coins during the year amounted to $4,567,823.96, and the seigniorage on the minor coin amounted to $1,882,057.86, all of which was duly accounted for and turned into the Treasury.

The mint at Philadelphia during the year also coined 510,993 pieces of silver for the Government of Salvador, and the mint at San Francisco coined 8,253,505 pieces for the Philippine Government.

The estimates.

The total estimates for the Mint Service for the fiscal year 1914, including all expenditures heretofore paid from earnings, are $1,222,270, which compares with $1,228,920, appropriated for 1913, a reduction of $6,650.

Prior to the present year all expenditures incidental to the maintenance and operation of the refineries connected with the service were made directly from current earnings. The law contemplates that this branch of the service shall be self-supporting, and to this end charges are imposed upon all bullion which requires treatment to fit it for coinage. These earnings in the past have been paid into the Treasury to the credit of the parting and refining fund and were all available under a continuing appropriation for the payment of the costs of refining operations. Beginning July 1, 1912, this practice was changed. The estimates for the Mint Service for the fiscal year 1913 included the sums required for operating the refineries. The expenses connected with these operations are now being paid from the regular appropriations, and the earnings are turned into the general fund of the Treasury as miscellaneous receipts. The earnings from all refinery sources during the last fiscal year, including the proceeds of sales of by-products and the surplus bullion recovered, amounted to $359,315.29, while the expenditures against these earnings were $237,912.99.

New York Assay Office.

During the year the assay office at New York has occupied the new building erected for the refinery and vacated the Wall Street building. A new structure, for which an appropriation has been made, will be erected upon the Wall Street frontage. For the present the office force is crowded into the rear building with the operative force, but conditions are better than they have been for several years in the old building. The refinery, which was necessarily closed for several years on account of the building operations, is again running with modern electrolytic equipment.

Minor assay offices.

Eight minor assay offices were in operation during the year, and the value of their deposits, together with their earnings and expenditures, are shown by the following table:

Location of office.	Value of deposits.	Earnings.	Expenditures.
New Orleans	$1,492,828.79	$3,704.60	$19,969.60
Carson	1,041,422.32	3,717.93	15,284.67
Boise	911,303.18	6,017.46	14,541.14
Helena	1,904,975.80	4,037.27	18,358.05
Charlotte	79,509.82	854.16	2,986.00
Deadwood	7,866,736.03	10,917.95	14,096.40
Seattle	5,882,549.09	10,681.40	44,644.73
Salt Lake City	1,158,499.28	2,249.41	14,793.10
Total	20,337,824.31	42,180.18	144,673.69

Recommendation.

The recommendation, submitted last year, that all of the assay offices save the one at New York be abolished is repeated. On the whole these offices involve an expense to the Treasury altogether disproportionate to the slight service rendered to the mining industry, in whose supposed interest they are maintained.

Production and consumption of gold and silver.

The production of gold in the United States for the calendar year 1911 is estimated by the Bureau of the Mint, in conjunction with the Geological Survey, at 4,687,053 fine ounces, of the value of $96,890,000, and the production of silver is estimated at 60,399,400 fine ounces, of the commercial value of $32,615,700. The industrial consumption of new gold in the United States during the year is estimated at $31,439,347. The industrial consumption of silver for the year is estimated at 29,897,014 fine ounces.

BUREAU OF ENGRAVING AND PRINTING.

The appropriations by Congress for this work amounted to $3,694,521, and the repayments for services and materials furnished the several executive departments and bureaus were $741,337.57, making the aggregate available for the work of the bureau during the year $4,435,858.57. The expenditures were $210,246.07 for salaries;

$1,631,161.74 for compensation of employees, of which amounts $660 and $2,378.29, respectively, were for employees detailed to other branches of the public service and not reimbursed; $1,904,996.46 for wages of plate printers and assistants; and $572,842.30 for materials and miscellaneous expenses, making an aggregate expenditure of $4,319,246.57, and leaving unexpended $116,612.

The work accomplished by the Bureau of Engraving and Printing during the fiscal year was approximately the same as in the preceding year, the total number of sheets delivered being 262,434,739, or a net decrease of 371,374 sheets over the deliveries of the previous year. The deliveries comprised 75,326,500 sheets of United States notes and certificates; 197,900 sheets of registered bonds; 11,728,293 sheets of national-bank notes; 75,364,206 sheets of internal-revenue stamps; 178,450 sheets of customs stamps; 96,590,530 sheets of United States postage stamps; 62,868 sheets of postage stamps for the Philippine Islands; 340,790 sheets of silver certificates, bank notes, registered bonds, and documentary and internal-revenue stamps for the Philippine Islands; 2,645,202 sheets of checks, drafts, etc., making an aggregate of 262,434,739 sheets. In addition to these sheets delivered, miscellaneous work was executed to the value of $104,409.48. The face value of all classes of securities, internal-revenue stamps, postage stamps, etc., delivered by the bureau amounted to $1,863,089,762.

Compared with the deliveries in the fiscal year 1911, there was an increase of 12.42 per cent in United States notes and certificates and bonds, 1.75 per cent in national-bank notes, 16.63 per cent in customs stamps, and 35.56 per cent in checks, drafts, etc.; and a decrease of 10.29 per cent in internal-revenue stamps and 1.11 per cent in postage stamps, or a net decrease of 0.14 per cent. In the constant effort toward economy it has been possible to make a further reduction in the number of sheets of internal-revenue stamps delivered in the year on account of increasing the number of stamps engraved on each plate.

Continued efforts toward economy and efficiency during the year produced practical results. The cost of the work executed in the year, as compared with the cost of the same work in the fiscal year 1911, shows a saving of $82,574.71, notwithstanding the considerable reductions in cost of work during the several preceding fiscal years.

Money laundering.

Investigation developed the fact that of the paper money returned to the department for redemption at least 30 per cent of it was not worn, but simply soiled, and only needed cleansing to be made suitable for reuse. Experiments made at the Bureau of Engraving and Printing demonstrated the practicability of washing the notes by a machine designed and built there. The machine has been installed in the office of the Treasurer of the United States and now successfully launders the notes that are not too badly worn for reissue. A contract has been let for the purchase and installation in the current fiscal year of 12 similar machines for use in the offices of the Assistant Treasurers in different sections of the country. It is believed that the reuse of laundered notes will result in considerable economy, due to the reduction in the number of new notes necessary to be issued, but the extent of the saving can not be determined until the process has been in operation for a number of months.

Smaller paper currency.

After a thorough investigation it has been decided to reduce the sizes of United States notes, gold and silver certificates, and national-bank notes, and to systematize the designs for the purpose of uniformity in portraits for notes of the same denomination of all classes, to make them more artistic, and at the same time to give an added security in the circumvention of counterfeiting.

The present notes are 3.04 inches wide by 7.28 inches long and the smaller notes will be the same size as the Philippine silver certificates, 2.5 inches wide by 6 inches long. It will require 18 months to engrave the original dies and make the necessary plates to print the reduced-size notes. Incidentally the use of the smaller note will result in a saving in the cost of paper and printing amounting to about $230,000 a year.

Power presses.

Efforts were recently made to obtain authority from Congress to use power presses in the printing of securities and were partially successful. The sundry civil appropriation act, approved August 24, 1912, authorizes the gradual installation of power presses for use in printing backs of paper money and 16 power presses commenced printing this work two days after the approval of the act. The annual savings, after the first five years, resulting from the use of such presses will be about $450,000.

OFFICE OF THE SUPERVISING ARCHITECT.

During the fiscal year ended June 30, 1912, there was inaugurated in the Office of the Supervising Architect the standardization of design for the smaller public buildings as far as this is practicable with the changing requirements of the different departments and especially of the Post Office Department. Although this practice was not adopted until the middle of the fiscal year, the results accomplished are decidedly promising, and it has been possible under this system to bring up the output to 90 buildings per year, notwithstanding a reduction in the force of draftsmen and a consequent reduction in office costs.

Each year shows a marked increase in the volume of business, mainly due to the fact that there is constant addition to the number of completed buildings under the control of this department, requiring a corresponding increase in the force of inspectors, draftsmen, and clerks to keep these buildings in satisfactory repair and preservation.

The following statements show the construction and financial operations of the department with reference to public buildings under its control during the fiscal year ended June 30, 1912:

Buildings completed and occupied at close of preceding fiscal year, including 50 marine hospitals and quarantine stations	702	
Buildings completed since	77	
		779
In course of erection, including Galveston, Tex., quarantine station	135	
Not under contract	263	
Total		1,177

In addition to the new buildings above tabulated, 13 extensions have been completed and 2 extensions placed under contract. There were in all, in the Office of the Supervising Architect, at the commencement of the fiscal year 1913, 296 projects, of which 263 were for new buildings and 33 for extensions.

At the present rate of 90 buildings per year, it will take three years and three months to place the 296 projected structures on the market.

At the beginning of the present fiscal year there were 164 sites authorized to be purchased or vested in the Government, for which no buildings have been provided.

STATEMENTS OF APPROPRIATIONS FOR PUBLIC BUILDINGS, JULY 1, 1911, TO JUNE 30, 1912.

EXPENDITURES DURING THE FISCAL YEAR.

For statutory salary roll	$95,619.95
For general inspector of supplies	4,375.10
For sites and additional land	3,269,082.17
For construction of new buildings	10,708,646.54
For extensions to buildings	2,035,292.49
For special repairs to buildings	102,961.30
For rent of buildings	87,666.65
For repairs and preservation	603,941.59
For mechanical equipment	494,665.48
For vaults, safes, and locks	93,879.31
For fuel, lights, and water	1,295,207.47
For electrical protection to vaults	24,490.00
For general expenses	840,278.61
For furniture and repairs of same	878,195.67
For pay of assistant custodians and janitors	2,125,828.06
For lands and other property	82.46
Total	22,660,212.85

CONTRACT LIABILITIES EXISTING ON JUNE 30, 1912.

On account of statutory salary roll		$4,066.37
On account of general inspector of supplies		
On account of sites and additional land		493,989.00
On account of construction of new buildings	$14,167,841.17	
On account of extensions to buildings	1,439,186.41	
On account of special repairs to buildings	4,088.25	
	15,611,115.83	
Less authorized contract liabilities in excess of amounts appropriated	5,138,512.55	
		10,472,603.28
On account of rent of buildings		12,829.55
On account of repairs and preservation		201,345.70
On account of mechanical equipment		126,147.74
On account of vaults, safes, and locks		53,784.51
On account of fuel, lights, and water		312,534.87
On account of electrical protection to vaults		5,482.57
On account of general expenses		57,716.65
On account of furniture and repairs of same		294,059.83
On account of pay of assistant custodians and janitors		86,444.80
On account of lands and other property		4.80
Total		12,121,009.67

BALANCES AVAILABLE JULY 1, 1912.

For statutory salary roll	$8,797.79
For general inspector of supplies	706.39
For sites and additional land	2,612,035.90
For construction of new buildings	5,443,349.45
For extensions to buildings	2,031,395.79
For special repairs to buildings	1,978.86
For rent of buildings	48,729.61
For repairs and preservation	29,918.31
For mechanical equipment	29,787.71
For vaults, safes, and locks	6,121.72
For fuel, lights, and water	131,367.78
For electrical protection to vaults	12,337.68
For general expenses	7,179.18
For furniture and repairs of same	52,374.04
For pay of assistant custodians and janitors	298,477.13
For lands and other property	463.17
Total	10,715,020.51

PUBLIC HEALTH SERVICE.

The Surgeon General reports the operations of the service through the seven administrative divisions of the bureau as follows:

Division of Scientific Research.

Investigations of matters pertaining to the public health have been conducted in increasing number in the several laboratories and in the field. The most important field investigations related to the origin and prevalence of typhoid fever and its control, and were made at Little Rock and Fort Smith, Ark., Texarkana, Ark.-Tex., Washington, D. C., Oskaloosa, Iowa, Lincoln, Nebr., Charlestown, W. Va., North Yakima, Wash., and rural districts of Virginia. In addition, sanitary surveys were made in respect to sewage pollution of interstate and international waters, with special reference to the spread of typhoid fever, as follows: Lake Superior and St. Marys River, Lake Michigan and the Straits of Mackinac, Lake Huron, St. Clair River, Lake St. Clair and the Detroit River, and Lake Ontario and the St. Lawrence River. A like survey of the Missouri River was also undertaken and is being continued.

Pellagra has been studied in Georgia, Kentucky, and South Carolina, and cases were admitted into the United States marine hospital at Savannah for the purpose. These studies included clinical and laboratory experiments, epidemiologic observations, and collection of statistics regarding the prevalence and geographic distribution of the disease. The results indicate that pellagra is increasing, a total of 27,700 reports of cases having been collected for the five years 1907–1911, and the case mortality based on exact figures from eight States being 38.83 per cent.

Investigations of Rocky Mountain spotted (tick) fever were continued in Montana, and consisted of laboratory studies and experiments in eradication in a territory of 8 square miles. The latter experiments included extermination of ticks which carry the disease and the destruction of wild animals which harbor them. As a result, the only case that occurred in the area selected was that of the officer

conducting the work, Passed Asst. Surg. Thomas B. McClintic, who contracted the infection in his laboratory and died of the disease.

A preliminary survey was made in Minnesota to determine the prevalence of trachoma in certain communities, the danger of the spread of the disease from the Indians to the white population, and the measures necessary for its control. Studies of the prevalence of trachoma among the mountaineers of Kentucky were also begun.

Other field investigations were made of outbreaks of anterior poliomyelitis (infantile paralysis) in Cincinnati, Ohio; "septic sore throat" in Baltimore, Md.; cerebrospinal meningitis in Texas; parasitic diseases in North Carolina; and malaria in Alabama.

Hygienic Laboratory.

The studies of the origin and prevalence of typhoid fever in the District of Columbia were completed and results published. Other studies related to measles, typhus fever, and cholera. In connection with the prevention of the introduction of the latter disease, many thousands of specimens were examined, and officers were sent to different localities to investigate cases and use anticholera serum for diagnostic purposes.

A notable achievement was the establishment of the hygienic laboratory phenol coefficient for use in testing the strength of disinfectants. By its use 54 commercial disinfectants were examined and reported on, and the standard was adopted by the Conference of State Health Authorities with the United States Public Health Service.

Other experimental work in the laboratory related to the toxicity of disinfectants, the influence of diet on certain poisons, the absorption and excretion of thymol by the body, the treatment of hookworm disease, and the utility of funnel gases in the fumigation of ships to kill rodents.

Digests of comments on the Pharmacopœia and the National Formulary for the calendar years 1909–1911 were made and published, and analyses were made and published of the laws of the several States and Territories relating to ophthalmia neonatorum, vaccination, sale of habit-forming drugs, and organization, powers, and duties of health authorities.

Antirabic treatment was administered to 84 persons in the laboratory, and 1,106 treatments were sent to State health authorities for their use. In order to study the influence of raw and pasteurized milk on infant morbidity, an infant's milk depot was opened at the laboratory and studies of the subject begun.

Seven Hygienic Laboratory bulletins and 10 Public Health Bulletins were issued during the year.

In connection with the administration of the act of July 1, 1902, regulating the propagation and sale in interstate traffic of viruses, serums, and toxins, 29 establishments were inspected. Twenty of these were relicensed, and five new licenses issued. The reissue of 4 licenses was under consideration at the end of the year.

The Tenth Annual Conference of State and Territorial Health Officers with the United States Public Health Service was held in Washington June 1, 1912. Two officers of the United States Public Health Service represented the Government at the Sixth Interna-

tional Sanitary Conference of the American Republics held at Santiago, Chile, November 5–12, 1911.

Leprosy Investigation Station, Hawaii.

Investigations of leprosy have been continued, and relate to the mode of transmission and treatment of the disease. In addition, studies have been made of plague, and the director has acted as sanitary adviser to the Territorial authorities.

Division of Foreign and Insular Quarantine and Immigration.

Quarantine activities have been especially marked during the summer months on account of the presence of bubonic plague at several places in Porto Rico and Habana, Cuba. The existence of yellow fever in several localities on or contiguous to the coast cities of Mexico (bordering upon the Mexican Gulf) has necessitated the imposition of active quarantine measures against the introduction of this disease into the United States.

Fortunately, the cholera situation has not constituted a serious menace, this disease being, so far as Italy is concerned, confined to the southern part of Sardinia.

The department issued a special regulation which provided for the use by vessels of rat guards on all lines or hawsers leading to wharves or shore, and for all gangplanks to be raised at night unless men were placed near by to destroy escaping rats. This regulation applied to all vessels lying in United States ports arriving from ports in South America, the West Indies, Africa, Russia, China, India, and the Pacific islands. A vessel belonging to the department, the steamer *W. D. Bratton*, was thoroughly overhauled and equipped with a device for rat destruction, and this vessel is now at Philadelphia engaged in the work of eradicating rats from the vessels entering that port. The device referred to is known as the Harker apparatus, which utilizes the funnel gases for the destruction of rodents. A large canvas hose is inserted into a porthole, and after the compartments to be fumigated are well closed to prevent the escape of the gas it is pumped in by the *Bratton*. Experimental work has shown that all rats in the fumigated compartments are killed in approximately 20 minutes. An advantage of this method is that no damage is done to delicate fabrics, paint work, or bright metal surfaces. A disadvantage is that the gas is odorless, and should any person be overlooked in the compartments being fumigated death might result. For this reason careful supervision is necessary. Oil of mustard is also injected with the gas to prevent this, as it is a very irritating fluid, and, it is believed, will preclude the possibility of such accidents.

At the 47 quarantine stations in the continental United States 7,908 vessels, carrying 530,452 passengers and crews, were inspected, and 275 vessels were disinfected. National quarantine has been administered as usual in 8 ports in the Philippine Islands, 8 in Hawaii, and 8 in Porto Rico. Officers have been stationed in the American consulates of the principal ports of Italy and Mexican and Asiatic ports to enforce the Treasury foreign quarantine regulations. Inspection has been maintained as usual on the Mexican border.

Medical inspection of immigrants.

During the fiscal year 1,143,234 aliens were inspected, and 27,021 were certified for rejection on account of physical and mental defects. Inspections were conducted at 83 stations in the United States, Hawaii, and the Philippines. Service officers under the supervision of commissioners of immigration have conducted the large immigrant hospitals at Ellis Island, N. Y., and Angel Island, Cal. At Ellis Island 7,356 patients were admitted to treatment.

Division of Domestic (Interstate) Quarantine.

The present outbreak of bubonic plague in California was discovered in 1907, and during that year the infection was also found among ground squirrels in rural districts. As a result of the cooperation between the Public Health Service and State and municipal health authorities, the disease has been eradicated from cities in that State. The infection still prevails, however, among ground squirrels in rural districts.

The occurrence and continuance of plague among ground squirrels in the rural districts of California is a distinct menace, not only to the urban districts of California, but to other States in the Union. While the disease can be controlled and eradicated from cities and elsewhere, constant danger of reinfection from infected rural districts exists. Commendable progress has been made in lessening the area of infection in counties of California.

The expenditure for plague eradication in California has been gradually reduced until at the present time it is costing about $11,250 per month. Of this sum $10,000 is being expended in the field work for the eradication of bubonic plague among the ground squirrels in the counties of Contra Costa, Alameda, San Joaquin, Santa Clara, San Benito, Santa Cruz, and Stanislaus, and in the prevention of the reintroduction of plague into San Francisco. One thousand two hundred and fifty dollars per month is being expended for the plague laboratory in San Francisco.

In San Francisco and cities around San Francisco Bay, work of destroying rats was continued. More than 137,542 rats were collected, of which 94,571 received bacteriological examination, but no plague infection was found among them. About 60,000 squirrels were collected, of which 56,284 were examined bacteriologically. Of these, 614 were found infected with plague.

During the last fiscal year there have been no cases of human or rodent plague in San Francisco. In view of the important relation which the eradication of plague from California bears to the health and commercial prosperity of that State, it is necessary that this work be continued.

Antiplague operations in Seattle, Wash., have been continued as in the past. All rats collected were delivered to the service representative stationed there, who made the bacteriological examinations. During the fiscal year a total of 45,131 rats were examined, and 25 infected rats found. No human case of plague has been reported from Seattle since October 30, 1907.

On June 17, 1912, the first intimation of plague in Porto Rico was received. At the request of the acting governor of the island the

Surgeon General of the Public Health Service detailed an officer for the purpose of taking charge of a campaign for its eradication. Up to the present time, September 30, 1912, there have been 57 cases, with 32 deaths.

Rocky Mountain spotted (tick) fever has prevailed in Montana and Idaho for at least several decades. Cases of the disease have from time to time occurred in other States until now it has been reported from practically all of the Rocky Mountain States, including Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Washington, Utah, and Wyoming.

An amendment to article 3 of the interstate quarantine regulations has been made relating to the transportation of lepers in interstate traffic.

Division of Sanitary Reports and Statistics.

Current information regarding sanitary conditions and the occurrence and progress of epidemics in foreign countries has been obtained through weekly reports received from service officers and American consuls stationed abroad. This information is necessary in the administration of the laws and regulations for the prevention of the introduction of disease into the United States. A knowledge of the prevalence and geographic distribution of disease in the United States has been secured through regular reports received from service officers and State and municipal health authorities.

The information thus obtained of the occurrence of diseases dangerous to the public health in the United States and foreign countries has been made available to quarantine officers, collectors of customs, health officers, and other sanitarians through the medium of the Public Health Reports. The Public Health Reports have been issued weekly for this purpose in editions of 4,500.

Public health work, be it city, State, or national, must be based upon a knowledge of the occurrence and prevalence of disease. Such knowledge is obtained currently through the notification of cases of sickness to the local health officer by practicing physicians. The requiring of such notification has been considered to come within the police powers of the States, and there is considerable variation therefore in the laws on the subject. As a primary step looking to the improvement of these laws and the production of greater uniformity, and in time, possibly their standardization, a digest has been published of the requirements of the several States relating to the reporting of cases of sickness.

The sanitation of cities plays an important part in the protection of the public health. Municipal laws and regulations on matters pertaining to public hygiene have been currently published in the Public Health Reports. This makes available to each city health officer the measures being promulgated in other cities and will be an important factor in correlating municipal sanitation.

Division of Marine Hospitals and Relief.

In the 23 marine hospitals owned by the Government and the 123 additional stations for relief of seamen of the merchant marine, there were treated during the year 51,078 patients, of which number 14,717 were treated in hospitals and 36,361 at dispensaries. At the

sanatorium for consumptives at Fort Stanton, N. Mex., 354 patients were treated during the year.

Relief stations of the service have been established at Ancon and Cristobal, Canal Zone, and owing to the small amount of relief applied for, the station at Dubuque, Iowa, has been discontinued.

Medical officers of the service detailed to vessels of the United States Revenue-Cutter Service cruising in Alaskan waters furnished medical and surgical relief to many of the natives at the various ports visited.

Physical examinations, exclusive of immigrants, were made of 10,264 persons connected with the Revenue-Cutter, Life-Saving, Steamboat-Inspection, Immigration, and Lighthouse Services, and also to the Coast and Geodetic Survey and Philippines Service.

Recommendations.

The outbreak of plague in Havana and Porto Rico in June last brings into new prominence the danger of the importation of the disease into our Atlantic and Gulf ports, and emphasizes the necessity of increasing the fund for the prevention and suppression of epidemic diseases. It was necessary, in order to safeguard the coast against this danger, to enforce additional quarantine regulations at all the ports of entry.

The Surgeon General calls attention to the need of additional facilities for the Hygienic Laboratory in Washington. New duties imposed by the act of August 14, 1912, and those which naturally arise in the gradual development of better health conditions in this country, require that the laboratory be enlarged by the erection of an additional new building on the present site. The Public Health Service is the chief agency of the Government in the investigation of the diseases of man and for research work in connection with the pollution of navigable streams and the safe disposal of municipal sewage. Every facility should be granted for the study and investigation of these pressing sanitary problems.

In the performance of the functions for the protection of the public health imposed upon the service from time to time by Congress, one of the essential factors is necessarily a knowledge of the occurrence, prevalence, and geographic distribution of disease throughout the United States. It is apparent that to eradicate disease or to prevent its spread there must first be information as to where the disease is present. Provision should be made whereby the Public Health Service can be kept currently informed regarding the prevalence of disease throughout the country.

Because of the growing demand for publications of the service there is need for an appropriation that will permit of larger editions of various bulletins, particularly those of a less technical nature. The distribution of such publications is one of the most effective means for the betterment of sanitary and health conditions.

With one exception, no additional clerical assistance has been granted the bureau of the Public Health Service in the past 11 years. Within that time many duties have been imposed upon the service, and the law of August 14, 1912, providing for increased functions renders an increase in the clerical force imperative.

The need of additional medical officers to fully man the stations of the service and to carry on the scientific investigations authorized by law has long been felt, and should now be met. State and municipal boards of health look to the Federal health agency to dispatch officers in connection with outbreaks of epidemic diseases, and to advise and assist in the problems of sanitation by which they are constantly confronted. For this work specially trained men are necessary, and this is particularly true in the investigation of contagious or infectious diseases and the pollution of navigable waters. The development of the service as contemplated in the act approved August 14, 1912, which greatly enlarged its scope and duties, should include the increase of the commissioned corps of medical officers, and should provide for the employment of a sanitary engineer and assistants.

LIFE-SAVING SERVICE.

It is gratifying to be able to preface the matter presented under the above heading with the statement that the loss of life from marine casualties during the year within the scope of the Life-Saving Service was much less than ever before in proportion to the number of vessels and persons involved. Only 16 lives were lost, although the number of disasters reported and the number of persons imperiled were much larger than have been presented in any preceding annual review of the operations of the Life-Saving Establishment since its general extension to the sea and lake coasts.

It appears that in two former years—namely, in 1880 and 1885—the number of lives lost was smaller. The number of disasters reported for the earlier year was only about one-sixth, however, and for the last-mentioned year something more than one-fifth, of the number reported for 1912, while the disproportion between the number of persons involved in 1880 and 1885, respectively, and the number imperiled during the past year is almost equally striking. The difference between the figures for 1912 and the similar figures of that year's nearest two competitors, as referred to in the foregoing connection, may be seen at a glance by reference to the following table:

Years.	Disasters.	Persons involved.	Lives lost.	Ratio of lives lost to number of disasters.	Ratio of lives lost to number of persons involved.
1880	300	1,989	9	1 in 33	1 in 221
1885	371	2,439	11	1 in 34	1 in 222
1912	1,730	7,193	16	1 in 107	1 in 450

Aside from the exceptionally small number of persons included in the last annual list of fatalities, the year's death roll is remarkable in another particular. Not a single one of the 16 persons who perished, as above stated, was lost from a seagoing vessel. Of the 8 vessels that figured in the casualties in which life was lost, only one was documented. This vessel—an 8-ton launch, barely within the documented classification—was wrecked January 20, 1912, in the breakers at the mouth of Coos Bay, Oreg., with the loss of her entire crew of 6 persons. Such a record becomes the more significant when

it is remembered that the 284 service stations are located at points on the coast of greatest danger to navigation.

A comparison of the year's summary of operations with similar data appearing in the report for 1911 is not without interest. While the number of persons aboard vessels meeting disaster during the year was approximately 20 per cent less than the number so situated during 1911, the number of lives lost during 1912 was nearly 60 per cent less than the number so reported during the preceding year. Moreover, within the last year the number of vessels involved in casualty was actually 18 per cent greater than the number endangered during 1911.

As regards the value of property—vessels and cargoes—endangered, the statistics for the two years are not so wide apart, the figures in this connection for 1912 exceeding by only 11 per cent those shown for 1911. The percentage of property loss for each of the two years is practically identical, being approximately 16 per cent.

Statement of operations.

A total of 1,730 vessels were reported as involved in casualty during the year within the limits of service operations. Of this number, 455 belonged to the documented class and 1,275 were undocumented, the latter class comprising launches, sailboats, rowboats, etc. The vessels of the class first mentioned had on board a total of 3,731 persons, 6 of whom were lost, and were valued, with their cargoes, at $11,896,205. The undocumented vessels carried 3,402 persons, 10 of whom perished, and were valued, with their cargoes, at $1,352,100. The total value of vessels and cargoes, both classes combined, was $13,248,305, of which amount $2,093,135 represents the estimated value of the property lost. A summary of the record for the year, including the foregoing figures and other important data relating to the year's work, is presented in the following table:

	Documented vessels.	Undocumented vessels.	Total.
Vessels involved	455	1,275	1,730
Vessels totally lost	46	13	59
Persons on board	3,731	3,462	7,193
Lives lost	6	10	16
Persons succored at stations	280	164	444
Days' succor afforded	612	202	814
Value of vessels	$9,396,480	$1,314,420	$10,710,900
Value of cargoes	$2,499,725	$37,680	$2,537,405
Total value of property involved	$11,896,205	$1,352,100	$13,248,305
Value of property saved	$9,860,995	$1,294,175	$11,155,170
Value of property lost	$2,035,210	$57,925	$2,093,135

Sources of assistance to vessels.

As many as 1,382, or approximately 80 per cent, of the 1,730 vessels included in the above statement, valued, with their cargoes, at $4,097,995, and carrying 4,366 persons, received aid only from the crews of the service stations; 289, valued, with their cargoes, at $6,950,425, and having on board 2,265 persons, were assisted by the station crews working in conjunction with revenue cutters, wrecking vessels, etc.; 30 vessels, valued, with their cargoes, at $1,901,330, and carrying 356

persons, were assisted only by private agencies; and 29, valued, with their cargoes, at $298,555, and having on board 206 persons, were either able to take care of themselves or suffered destruction before help from any source could reach them.

In addition to the assistance afforded by the life-saving corps as set forth in the preceding paragraph, aid of more or less importance, such as pointing out channels, emergency piloting, transmitting and delivering messages between vessels and the shore, etc., was extended during the year to 115 documented and 229 undocumented vessels. Surfmen on duty in the station towers and on the beaches gave warning signals, also, to 238 vessels standing into danger. Of the vessels so warned, 165 were steamers. On 216 occasions these signals were given at night. The names of the vessels receiving such warnings, and the number of persons carried by them, are not usually known, and the value of the property and the number of lives saved thereby can not, therefore, be given. It may be safely stated, however, that a very large amount of property and many lives are thus preserved each year.

The cost of the maintenance of the service during the year was $2,346,881.02.

Miscellaneous services of crews.

While the services mentioned in this paragraph have no relation to the rescue and salvage work which the law requires of the life-saving crews in connection with casualties to vessels, they are nevertheless of sufficient importance to be made the subject of special reference. The people living in the neighborhood of the life-saving stations have fallen into the habit of turning to the keepers and surfmen for assistance when overtaken by misfortune or threatened by danger. Indeed, they have grown generally to expect the life-savers to come at their beck and call on any and all occasions of trouble. To such appeals the crews cheerfully respond when practicable, although they are thereby sometimes subjected to personal pecuniary loss and even to injury or risk of life. As showing the diversified character of these services may be mentioned the rescue during the year of 101 persons—bathers, swimmers, and others—from drowning; the giving of medical and surgical first aid to 87 sick and injured persons; providing shelter and subsistence for 202 persons detained on the beaches by storms and tides; the recovery of the bodies of 140 persons who were drowned or who met death in other ways; the recovery of numerous objects of value, such as fish nets, lumber, domestic animals, boats, wagons, buggies, automobiles, money, jewelry, etc., from the sea, from bogs, mire, and quicksands, and from thieves; and effective assistance afforded at neighborhood fires, of which there were 56 instances.

Power boats for rescue work.

As has been observed in former reports, the remarkable growth in the work of the service and the admirable results achieved by the life-saving corps in recent years are largely due to the employment of power boats at the stations, which has made it possible to travel longer distances and to pay less regard to weather conditions than

formerly in responding to calls from distressed vessels. Of the 3,678 persons conveyed ashore or to other places of safety from vessels meeting disaster during the year within the field of the service, 2,669, or 73 per cent, were transported by the service power craft alone.

There were built and put in commission at the stations within the year twelve 36-foot self-righting and self-bailing power lifeboats and 14 Beebe-McLellan self-bailing power surfboats, making the total number of power lifeboats and surfboats in use at the year's close 109, namely: Of the lifeboats, 28 of the 36-foot length and 42 of the 34-foot length; and of the surfboats, 39.

Motor-boat accidents.

Reference was made in the last report to the steadily increasing number of motor boats to be found of late years in the tabulations of casualties reported by the life-saving crews. Accidents to craft of this type have come to furnish a very considerable share of the work performed by the corps. The number of such boats to suffer casualty last year was 982, or 57 per cent of the entire number of vessels reported from the stations. Of these, 165 were documented and 817 undocumented. They carried a total of 3,221 persons, or 45 per cent of the number of persons involved in casualties during the year, and were valued, with their cargoes, at $1,525,887. Ten of the 16 persons lost during the year perished in accidents to these boats.

Establishment, rebuilding, and improvement of stations.

One new life-saving station was completed and put in commission during the year, namely, at Green Hill, R. I., making the total number of stations within the Life-Saving Establishment at the year's close 284. These are distributed as follows: Two hundred and three on the Atlantic and Gulf coasts, 62 on the coasts of the Great Lakes, and 19 on the Pacific coast. The new station referred to last year as nearing completion at Eagle Harbor, Mich., has been completed since the year closed.

The Quogue, Smiths Point, and Tiana stations, on the coast of Long Island, were rebuilt during the year to replace decayed and antiquated buildings. Contract was also entered into during the year for rebuilding the Blue Point, Moriches, and Rockaway stations, on the same coast, to replace structures no longer suited to the needs of the service.

Work on the station at Michigan City, Ind., referred to last year as under extensive improvement, was completed within the year, and extensive repairs to the station at Kewaunee, Wis., begun within the year, were also completed.

Important improvements were begun during the year to other stations as follows: At Cuttyhunk, Mass., Brenton Point, R. I., and Point Bonita, Cal., a new boathouse and launchway; at Cobb Island, Va., and Racine, Wis., repair of old boathouse and launchway; and at Yaquina Bay, Oreg., a new boathouse and boat hoist. This work has all been completed except that at Cobb Island.

REVENUE-CUTTER SERVICE.

The following is a summary of the results of the operations of the Revenue-Cutter Service during the fiscal year 1912:

Lives saved (actually rescued) from drowning	106
Persons on board vessels assisted	2,212
Persons in distress taken on board and cared for	275
Vessels boarded and papers examined	24,918
Vessels seized or reported for violation of law	1,208
Fines and penalties incurred by vessels reported	$224,210.00
Number of regattas and marine parades patrolled in accordance with law	31
Number of vessels to which assistance was rendered	260
Derelicts and obstructions to navigation removed or destroyed	45
Value of vessels assisted (including cargoes)	$10,545,573.00
Value of derelicts recovered and delivered to owners	$166,175.00
Appropriation for 1912, including appropriation for repairs	$2,463,000.00
Net expenditure for maintenance of the service, including repairs	$2,458,246.56
Estimated unexpended balance	$4,753.44

Thus, for every dollar which the Government invested in the maintenance of the Revenue-Cutter Service there has been a return of $4.36 in the form of property saved from the perils of the sea, and this in addition to lives saved and other beneficial acts in the interests of mankind. To accomplish this work there have been 25 cruising cutters and 18 harbor vessels and launches actively employed during the year.

Aside from a certain amount of routine work, the major duties of the Revenue-Cutter Service are of an emergent character, requiring its equipment and personnel to be kept at the highest state of efficiency in order to respond to sudden calls. The climatic conditions each year are such as to cause disaster and accident to some of the great fleet of merchant craft owned in the United States, but occasionally there come periods of unusually severe weather conditions when the resources of the Revenue-Cutter Service are taxed to their utmost to respond to the numerous calls for aid.

The fiscal year 1912, just ended, was probably one of the most trying periods to shipping of any year during the past quarter of a century. Frequent gales swept the Atlantic and Gulf coasts, while during the winter months the unusually low temperatures caused great danger to shipping and actual suffering to the crews on account of the ice conditions, even as far south as Chesapeake Bay. These conditions resulted in almost constant calls for the assistance of revenue cutters. None were unheeded. In consequence the beneficial work of the service in all its activities during the past fiscal year has exceeded that of previous years.

It would be difficult to name the cutters which accomplished the best work during the winter cruising season along the North Atlantic coast. Each on her own particular cruising station was kept constantly on the qui vive in responding to calls for assistance. Each performed her duties in an admirable manner. The officers and men of the winter cruising fleet all deserve great praise for the manner in which they performed laborious and ofttimes hazardous tasks during that protracted period of storm and stress.

Nearly all of the work of the service is of interest because of its emergent nature, but during the past year several conspicuous in-

stances are deserving of more than passing notice. Such were the operations of the *Yamacraw* and *Seminole* during and after the hurricane which swept over the South Atlantic coast the latter part of August, 1911. Eleven vessels which broke adrift from their moorings or became disabled during the hurricane were rescued by these two ships. During the height of the gale the *Yamacraw* proceeded to sea over the bar at the mouth of the Savannah River when, owing to the fact that buoys and aids to navigation had been swept away, other vessels would not make the attempt. She rescued the crew and passengers of the steamship *Lexington* and rendered material aid to a number of other disabled craft under trying conditions. Subsequent to the storm this vessel succeeded in towing into port or destroying a number of derelicts left in the path of the hurricane.

On December 28 and 29 the *Onondaga* rescued the torpedo boat *Warrington* with her crew of 83 men, which, as a result of a collision and subsequent gale, was in a sinking condition off Cape Hatteras. Seventy members of the crew of the *Warrington* were taken on board the *Onondaga* in the latter's lifeboats in a high sea under most difficult conditions. The *Warrington* was then towed to Norfolk.

From June 6 to 8, 1912, a volcanic eruption of Mount Katmai occurred in Alaska, which covered the country in that vicinity with smoke and ashes. The *Manning* was in the harbor of Kodiak, the largest settlement in that portion of the Territory, taking on coal and water. The inhabitants of the surrounding country were terror stricken and in imminent danger of death from suffocation. Capt. K. W. Perry of the *Manning* took charge of Kodiak and the surrounding villages, gathered all the inhabitants on board his vessel for protection, and by his untiring efforts succeeded in bringing them all safely through the catastrophe with the exception of one aged woman, who succumbed. Other vessels of the Bering Sea fleet were at once rushed to the scene, order was restored out of chaos, and with the generous aid of Congress, which appropriated $30,000 to cover the unusual expense, the people have regained confidence and the devastated country has gradually resumed its normal condition. The emergency was met in such a satisfactory manner that the President has seen fit to express officially his admiration for the work of those officers and men of the fleet whose efforts gave safety to the stricken people and restored order.

The patrol of the Bering Sea was successfully maintained by the *Tahoma*, *McCulloch*, *Rush*, and *Manning*. No violations of the sealing treaty were discovered, although a number of vessels were warned or placed under surveillance. The *Bear* made the usual cruise through the Bering Sea and Arctic Ocean for the purpose of protecting Government interests in distant parts of Alaska. The duty of conveying the United States district court and its attachés to remote places in Alaska in order to administer the law was performed by the *Thetis*. During the winter, in addition to her regular duties in the Hawaiian group, this vessel made several cruises to the Laysan and Lysiansky Islands in the interests of the Department of Agriculture. The *Algonquin*, in addition to her regular duties in the waters of Porto Rico, made an extensive cruise in West Indian waters in the interest of the State Department.

Laws governing the anchorage and movements of vessels in the harbors of New York and Chicago, and in the Kennebec River, Me.,

and the St. Marys River, Mich., have been strictly enforced. In view of the undoubted benefits to shipping that have accrued from the enforcement of the anchorage laws in these ports, it is urged that steps be taken for the enactment of similar laws to govern the anchorage of vessels in all the large seaports.

In enforcing the navigation and motor-boat laws, 24,918 craft were boarded and examined, of which number 1,208 were reported for violation of law, involving fines to the amount of $224,210. To enforce the law to provide for the safety of life on navigable waters, 31 regattas and marine parades were patrolled during the year.

The summary of the relief work performed during the year shows that assistance was rendered to 260 vessels, 87 more than in 1911, and nearly double the average number for a number of years previous. One hundred and six lives were saved, as compared with 55 the previous year. Forty-five derelicts and other obstructions to navigation were removed, being 24 more than the year previous. The total value of the property saved amounts to $10,711,748, as compared with $9,488,562 for the year 1911. The total cost of the service for the past fiscal year was $2,458,246.56.

The service, from the standpoint alone of duties performed for the amount invested, has more than doubled its efficiency during the past 10 years, yet notwithstanding this fact the annual appropriation for its maintenance was reduced by Congress $100,000 in 1911. For the current fiscal year of 1913, the appropriation has been still further reduced $28,000 below the amounts appropriated for 1911 and 1912, respectively. By the most rigid economies in all expenditures and by postponing the purchase of necessary new equipment the reduction of $100,000 has been sustained during the past two years. This further reduction of $28,000, which was made notwithstanding the constantly increasing cost of rations, fuel, and supplies, and the ever increasing demands upon the service, due to expanding commerce on the seas, must in all probability result in a deficit if the service is to continue to be as efficiently maintained during the current year. If the appropriation for the current fiscal year is not supplemented by a deficiency appropriation, and the appropriation for the next fiscal year is not increased, the activities of the service must of necessity be curtailed and its value to the country materially reduced in consequence.

Radiotelegraphy.

The importance of radiotelegraphy to an emergency service needs no exposition. Advancement in this art is so rapid as to require frequent improvement in plant to keep the equipment of our ships abreast the times. The necessity for the most modern apparatus and methods has been forcibly impressed on the world by the recent great disaster on the sea, and it is imperative that the old sending and receiving mechanism on all sea-going revenue cutters be replaced with the most up-to-date apparatus obtainable, and that a constant radio watch be maintained. The laws make it obligatory for vessels of the merchant service to be so equipped and operated. Revenue cutters maintained for the purpose of assisting those vessels should be, at least, equally as well equipped. A constant radio watch necessitates three operators on each cutter. At present the appropriation for the service permits of but two on each vessel. The expense of

providing new radio equipment and additional operators has been included in the estimates submitted for the fiscal year 1914.

New vessels and repairs.

Two new vessels, the *Unalga* and *Miami*, have been completed and equipped. The *Unalga* will be stationed on the coast of southeastern Alaska and the *Miami* will be assigned to duty on the coast of Florida. In accordance with the provisions of the act authorizing the construction of these new vessels, the old cutters *Rush* and *Forward* are withdrawn from active service.

Following the building program recommended by the Secretary of the Treasury in his last annual report, a bill was introduced during the last session of Congress for the construction of four new cutters, and the House Committee on Interstate and Foreign Commerce reported upon it favorably the latter part of the session. It is earnestly hoped that these four vessels will be authorized, for, as has been repeatedly pointed out, there is most urgent need of them, three to replace the *Woodbury*, *Manhattan*, and *Winona*, all old and unserviceable, and one to replace the *Perry*, lost in the Bering Sea during the summer of 1910.

During the year, in addition to the current repairs on all vessels of the fleet, major repairs have been made to the *Bear*, *Seminole*, *McCulloch*, and *Hudson*, and a contract made for reboilering the *Calumet*. Six of the vessels of the first class, built prior to 1900, will soon need reboilering and extensive repairs to hull and machinery at an estimated cost of $50,000 each. It is proposed to make these extensive repairs to as many of these vessels each year as the limited appropriation for this purpose will permit. To this end the *Manning* will, during the current fiscal year, be given this overhauling, and, if possible, the repairs to one other vessel will be commenced.

Although revenue cutters are kept constantly in commission, the repair bills are very small. The total annual appropriation for repairs of all kinds is less than 5 per cent of the appraised value of the ships. Considering the age of the majority of the vessels and the severe usage to which they are necessarily subjected, it is believed that no similar fleet of vessels has so small an amount spent upon them for repair.

Appointment of cadets.

The sundry civil bill for 1913 contains the following provision:

> No additional appointments as cadets or cadet engineers shall be made in the Revenue-Cutter Service unless hereafter authorized by Congress.

From July 1, 1911, up to the present time the following vacancies in the active list have occurred: Five resignations, 3 deaths, and 6 retirements. During the remainder of the present fiscal year there will be one retirement for age. This makes a total of 15 vacancies in the commissioned personnel to be filled during the current fiscal year, over half of which have been caused by death or resignation. There are at present 18 cadets undergoing instruction at the school of instruction at New London, Conn. Of these, 13 will fill vacancies which existed prior to July 1, 1911, so that there are at present but 5

cadets available to fill the vacancies which have occurred since July 1, 1911. There remain 10 vacancies that can not be filled because of the foregoing provision of law. If the inhibition of the further appointment of cadets continues, the efficiency of the service must suffer because of an insufficient number of officers to perform the duties required. The total number of officers authorized by law is 242, and in such a small number the existence of 10 vacancies which can not be filled under the law, with every prospect of additional vacancies from death and resignation, is a serious condition, and it is earnestly recommended that the matter be presented to Congress for relief.

REPORT

OF

THE SECRETARY OF WAR.

WAR DEPARTMENT,
Washington, D. C., December 2, 1912.

To the PRESIDENT:

SIR: I have the honor to submit the following report of operations of this department during the past year:

THE ARMY.

The act of February 2, 1901, limits the President's authority to a total enlisted force in the Army of not exceeding 100,000 men at any one time, including the Philippine Scouts.[1] Within this statutory limit the authorized enlisted strength of the Army is fixed from time to time, as needs may vary, by Executive order.

Authorized strength.

On July 1, 1912, the authorized strength of the Regular Army was 4,812 officers and 81,409 enlisted men,[2] a decrease of 36 officers and an increase of 3,886 enlisted men, over the preceding year.[3] In addition the authorized strength of the Philippine Scouts is 180 officers and 5,732 enlisted men, the same as during the preceding year.

Actual strength and distribution.

On June 30, 1912, the actual strength of the Regular Army was 4,470 officers[4] and 77,835 enlisted men, a total of 82,305, and an increase since June 30, 1911, of 189 officers and 7,834 enlisted men.[5] In addition to this, the actual strength of the Philippine Scouts on June 30, 1912, was

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[1] The authorized number of commissioned officers is fixed by statute.

[2] By General Orders, No. 8, 1912.

[3] These figures do not include the Hospital Corps, which has an authorized strength of 3,500 men, but which force under the law is not to be counted as a part of the enlisted strength of the Army.

[4] Of the 4,470 officers above mentioned, 998 were absent from their commands at the close of the last fiscal year, 760 of them being on detached service, on recruiting service, at the Military Academy, at the various Army service schools, as instructors of the militia, and at various schools and colleges, and on other similar detached duty, as provided by law. For complete statistics as to the strength of the Army, commissioned and enlisted, active and retired, and the duties of officers on detached service, see The Adjutant General's report.

[5] This increase in the number of enlisted men was for the purpose of providing for the new foreign garrisons being installed in Hawaii and Panama, and to raise the remaining regiments in the Philippines to full strength.

180 officers and 5,480 enlisted men, an increase during the year of 1 officer and 79 enlisted men. On that date the Army, including the Philippine Scouts, was distributed geographically as follows:

In the United States	61,584
In Alaska	1,232
In the Philippines:	
Of the Regular Army	10,970
Philippine Scouts	5,660
In China	1,256
In Porto Rico	614
In Hawaii	3,969
In the Canal Zone	821
Troops en route and officers at other foreign stations	1,859

New officers.

During the fiscal year ended June 30, 1912, and from the close of that year to October 15, 1912, 395 second lieutenants have been appointed in the Army—177 from the United States Military Academy, 29 from among the enlisted men of the Army, and 189 from civil life. These appointments left 134 vacancies of second lieutenancies in the line of the Army available on October 15, 1912, for the appointment of civilians, and 20 such vacancies in the Corps of Engineers. An examination of civilian candidates to fill these vacancies was held in September, and another examination is to be held in January, 1913. Every effort is being made to maintain the highest possible standard of selection in filling these vacancies, and no candidates are being encouraged or accepted who are not thought to be up to such standard.

Personnel.

I believe that the spirit of the personnel of the Army continues to improve. I attribute this not only to the work of the service schools and the General Staff, but to the better opportunities for performing its legitimate functions as an Army which have been afforded by recent maneuvers and recent changes of organization and methods of work. I anticipate much greater growth of spirit from the adoption of the tactical organization mentioned below. Whether or not a merit system governing promotion and elimination can be ultimately adopted, I believe that an immense improvement will inevitably result in this respect as the Army gradually assumes its proper function as an integral organization. Unfit officers who have been able to hold their positions in the routine administration of a post under our past system very promptly have their defects and incapacity discovered under the searching tests of field or maneuver conditions, or even under the increased duties which a proper tactical organization will devolve upon them. One of the surest ways of getting rid of the deadwood of our Army is to work it, so far as possible, under the applicatory methods of modern military training. Evidences of this effect in recent joint maneuvers with the militia have already been brought to my attention.

Enlistment and desertions.

The actual strength of the Army on June 30, 1912, was about 4½ per cent below its authorized strength. Of the 158,917 applicants for enlistment and reenlistment only about 25 per cent were accepted, a smaller percentage than during the preceding year and indicating a continued maintenance of the existing standards of care of selection. The rate of discharge for disability, while slightly greater than for the fiscal year 1911, continues less than for a number of preceding years. The percentage of desertions was about 3 per cent of the whole number of enlistment contracts in force during the year, a rise from 2.28 per cent for the preceding year, but a percentage lower, with one exception, than any other year during the past 90 years.

HEALTH AND SANITATION.

Typhoid prophylaxis.

I reported last year the brilliant results accomplished by the Medical Corps of the Army in preventing typhoid in the Maneuver Division, mobilized on the Mexican border. The record of the Army since is a further demonstration of the value of this method of inoculation. By War Department order, dated June 9, 1911, I directed that all recruits be immunized against typhoid fever immediately after enlistment. This was followed by another order, dated September 30, 1911, requiring that all officers and enlisted men in the Army under the age of 45 be given the typhoid prophylactic. The work of inoculation has been actively prosecuted ever since and is now substantially complete. The United States Army is the only one in which this immunization against typhoid fever is mandatory, and therefore its records will be of peculiar value henceforth. The following table shows clearly the influence of inoculation in reducing the recurrence of typhoid fever among the troops stationed in the United States even before the work of immunization was completed. Inoculation was begun to a slight extent in the summer of 1909 among persons who volunteered for treatment.

	Cases.	Deaths.
Typhoid fever in the Army in the United States:		
1909	173	16
1910	142	10
1911	44	6
1912 (8 months)	9	1
Total	368	33

Of the 368 cases and 33 deaths reported in the preceding table, only 18 cases and not a single death occurred in immunized individuals. Although during the current year (1912) the number of nonimmunized persons in the Army in the United States was very

small, they contributed 6 out of the 9 cases of typhoid fever and the only death.

In contrast with this great reduction of typhoid fever in the United States, it has been observed that the Filipino native troops, where the inoculation was necessarily begun later, and who had not up to the beginning of the present year received the prophylactic, show no reduction in their typhoid rate.

About the 1st of July the custom of recording the degree of severity of the general reaction to the inoculation was discontinued, since the observations made were numerous enough to show definitely the rarity of unpleasant and severe reactions and to demonstrate that the amount of inconvenience and discomfort following inoculation is very small. The slight amount of illness and the total absence of mortality compare very favorably with the occasional infections following vaccinations against smallpox. In general terms, it may be stated that in two-thirds of the cases, there is no constitutional disturbance, but only a temporary local swelling, with moderate tenderness. In the cases showing general reaction, it was classed as mild in 30 out of the 33⅓ per cent, moderate in 3 per cent, and severe in one-third of 1 per cent.

Beriberi.

I commented last year on the work of the Medical Corps in discovering the cause of and preventing beriberi among the native troops in the Philippines. That work has resulted this year in the virtual extirpation of this disease, which was formerly the greatest cause of death and disability among these troops. During the calendar year 1911, there have been only three cases, with no deaths. This has been accomplished by the substitution of an undermilled rice for the polished rice formerly used, and the addition of beans to the dietary.

International Congress of Hygiene and Demography.

I am glad to report that the work of three bureaus of the War Department in sanitary matters has been liberally recognized at the meeting of the Fifteenth International Congress of Hygiene and Demography at Washington, during last September. The Subsistence Department and the Quartermaster's Department were each awarded a diploma of merit, and diplomas of superior merit were granted to the Medical Department for exhibits showing the investigation and development of methods of prevention of uncinariasis (hookworm), typhoid fever, beriberi, and certain other communicable diseases; also to the Experimental Shoe Board of the War Department for its investigation leading to the adoption of a model shoe for the Army.

Venereal diseases.

The high percentage of venereal disease continues to be the reproach of the American Army, and the daily average number of those sick from that cause during the past calendar year was larger than the daily average number of those

sick from all other of the more important diseases combined. Vigorous efforts have been instituted by the Medical Corps, in cooperation with troop commanders, to meet the evil, but time has not yet sufficed to show the efficacy of the methods adopted. The more careful methods of inspection and diagnosis introduced during the past year by the Medical Corps have resulted in producing a larger percentage of hospital admissions for syphilis than in former years, owing to the detection of cases heretofore latent and unsuspected. Under general orders, issued by this department May 31, 1912, all officers serving with troops were directed to do their utmost, through the encouragement of healthful exercise and by supplying opportunities for cleanly social and interesting mental occupations for the men under their command, as well as by personal instruction and effort, particularly among the younger men, to spread among their commands a better knowledge of the dangers of licentiousness and to instill better standards of continence and clean living. Lectures and instruction on the same subject are now given throughout the service by the surgeons attached to the different organizations. In my last annual report I recommended the stoppage of pay of officers and men during periods of disability caused by such misconduct, and I am glad to report that legislation to that effect was adopted at the past session of Congress and is now being vigorously enforced. It is hoped that these steps will result in a reduction of the evil.

Nevertheless, I believe that the ultimate causes which make the record of our Army in this respect shameful beyond that of the army of any other civilized nation are inherent in our own shortcomings as a nation in dealing with this matter. So long as in our civil communities, and particularly our larger cities, we continue to close our eyes to the magnitude and extent of the evil and refrain from attacking it with all of the weapons which modern scientific knowledge places in our hands, it can not but be expected that the younger men in our Army, leading the abnormal life of the soldier, will show the effect of the evil to a marked degree. In this respect I believe that the so-called anticanteen legislation has been responsible for much vice. During the past year and a half I have visited personally and inspected nearly half of the 49 mobile Army posts in the United States. In almost every instance I have found the military reservations adjoined by dives and ill resorts of the vilest character. The testimony of the officers of the Army is almost unanimous to the effect that these establishments have arisen or greatly increased in number since the sale of light wines or beer at the post exchanges has been abolished. By that legislation the soldier is in effect deprived of the garrison club, where formerly it was comparatively easy to keep him for his amusements, and he now resorts for his liquor to places where

every kind of temptation surrounds him. There may have been and probably were abuses in the methods of some of the so-called canteens as managed under the system now abolished by law; but these abuses were not necessary or inherent in the system, and I am very confident, from my personal investigation, that most of the post exchanges under that system constituted effective and practical instruments toward Army temperance and cleanliness of living, and that a very considerable percentage of the evils from which the Army is now suffering is directly attributable to their abolition.

MILITARY OPERATIONS.

In Mindanao.

There has been less trouble from outlaws and ladrones in the Philippines than heretofore. The only affair of at all serious character was an attack made on Capt, Ephraim G. Peyton's command (Troops A and C, Second Cavalry. and Thirty-fourth and Fifty-second Companies, Philippine Scouts) by a band of Moro outlaws on January 14, 1912, about 12 miles east of Siet Lake, in the Island of Jolo, Department of Mindanao. One officer and one enlisted man were wounded in the engagement and 20 Moros were found dead after the conflict.

Mexican frontier.

In my last annual report, I reported the return to their stations of the troops which had been mobilized in Texas during the progress of Madero's revolution against Diaz. Subsequently, and owing to various later revolutions which were set on foot against the Government of President Madero, it again became necessary to patrol the frontier in aid of the neutrality laws. On their return from the Philippines the Second Cavalry were sent to Fort Bliss, El Paso, and the Fourteenth Cavalry to Forts Clark and McIntosh. On September 7, 1912, owing to border raids by Mexicans, formerly part of Orozco's rebel army, the Ninth Cavalry was ordered from Fort D. A. Russell to Douglas, Ariz., and the Thirteenth Cavalry was ordered to El Paso, Tex., from Fort Riley. The conduct of the troops assigned to these duties during the past year has been most satisfactory, and the effect of their presence excellent. They assisted in Texas in the suppression of Gen. Reyes's attempt to instigate an insurrection against Madero's government, and later, after the passage of the joint resolution of Congress authorizing the President to prevent the importation of arms and munitions of war into Mexico, they assisted in the enforcement of that legislation, which was primarily responsible for the unsuccessful end of the insurrection led by Gen. Orozco in Chihuahua. And after the Orozco forces had broken up or scattered, and were raiding the border, there was considerable active patrol duty performed by our troops to prevent raids upon American ranches in Texas and Arizona. Brig. Gen. Joseph W. Duncan was in command of the Department

of Texas, and in charge of these operations until his death, on May 14, 1912, after which date Col. (now Brig.-Gen.) E. Z. Steever succeeded him. In the light of the recent proposals to reduce by one-third the force of Regular Cavalry belonging to the United States Army, I deem it proper to call attention to the fact that the brunt of this entire work fell upon and was performed by Cavalry, and that during any continuance of unsettled conditions on that long and sparsely settled frontier, such patrol work must be continued by that arm of the service. There are now on duty in connection with the patrol of the Mexican border six regiments of Cavalry, a regiment and a half of Infantry, a battery of Field Artillery, two companies of Coast Artillery, and one company of Signal Corps troops. The approximate total strength of these troops is 6,754 officers and enlisted men. There are thus at the present time engaged in this special duty a larger number of Cavalry regiments than the five which it was proposed last winter to cut out of the Army.

RELIEF OF MISSISSIPPI FLOOD SUFFERERS.

In the latter part of March and early April of 1912 most disastrous floods occurred in the Mississippi River and its tributaries, the flooded area covering 15,000 square miles, or a tract larger than the combined area of the States of Maryland and Delaware or of Vermont and New Hampshire. Appropriations amounting to about $1,240,000 were made by Congress for the purpose of providing tents, rations, and other necessities and services to alleviate the distress of sufferers in the flooded district. The work of distributing this relief was organized and carried out by the Quartermaster's and Subsistence Departments of the Army, under the general direction of Maj. J. E. Normoyle, of the Quartermaster's Department. The department was assisted in the work of relief by naval, revenue, and militia officers, by the Red Cross, and by local citizens' committees. The work was handled so quietly and efficiently that it has not attracted the public attention which it deserves. But it was directly instrumental in preventing a very large amount of suffering in what has proved to be one of the worst floods in the history of the Mississippi River. For a considerable period of time 185,000 persons were furnished daily rations, 20,000 persons were furnished shelter, and 50,000 head of live stock were provided with forage. I believe that the work was accomplished with an unusually small amount of wastage.

ARMY ORGANIZATION.

In my report last year, I pointed out a number of the patent defects of our military organization as they had been then brought to my attention. I called attention to the diffusion of the Army

and the lack of tactical organization, which results in our having what is virtually a number of scattered groups of constabulary rather than an integral organization, and which prevents the proper training and teamwork of a national army. I also called attention to the absence of any reserve to bring our miniature units to full or war strength in case of necessity and the disadvantages to training and morale which arise from maintaining company units at too low a strength. I also called attention to the necessity of the adoption of a different theory of organization for our foreign garrisons than the half-strength peace basis upon which the Regular Army within the limits of the United States has been habitually carried. During the year the department has been at work remedying, so far as possible, these and other defects of organization. It has proceeded upon the theory that before asking Congress for legislative help, we should advance as far as possible in the direction of reform by administrative action. By doing this, not only can many evils be remedied without legislation, but the very effort at reorganization, and the study which that involves, as well as the practice under the new methods, all tend to shed a clearer light upon the ultimate problem and to make much more definite and clear the character of the legislation which will be eventually needed.

Army plan of reorganization.

One of the first and most important fruits of the efforts of the past year has been the production of a general scheme of Army reorganization by the War College Division of the General Staff. In this connection it should be remembered that until after the Spanish War there was no provision in our military establishment for anybody whose duty it should be to study the organization of the Army or to make plans for war. The careful system of post-graduate education carried on now at the service schools at Leavenworth and Fort Monroe, and the War College at Washington, was incomplete and rudimentary. The work of its completion and coordination has been developed by the General Staff, and it is only within the last few years that the system has gained sufficient headway to bear fruit in the shape of consistent and harmonious military doctrines.

This plan of reorganization is the latest product of this educational system. It does not aim to go into too specific details, but is a study of the broad principles which must govern any successful military policy of this country. It constitutes a broad chart for present guidance and for future progress. The first draft of this plan was thoroughly discussed last summer at the series of conferences held by the Secretary of War and attended by representatives from all branches of the Army and by some Members of Congress. Subsequently, in printed form, it has been distributed not only to Members of Congress and throughout the Army and the National Guard, but very

widely through institutions of learning elsewhere in the United States. In general scope and purpose, the plan is a constructive application to modern American conditions of the principles of military policy carefully worked out by Gen. Upton in his exhaustive studies of military policy soon after the Civil War. I annex a copy of this plan as Appendix A to this report.

Reorganization of the foreign garrisons.

Two events of recent occurrence impose new and additional demands upon the Regular Army. The Panama Canal is approaching completion, and the national policy under which it has been authorized and constructed will make it a canal which, in case of war in which we are a party, is to be open to the American fleet and closed to its enemy. This makes necessary its fortification and the presence of a garrison of troops by which its locks and works can be defended. A careful study by the Panama Defense Board has decided that this garrison in time of peace in order to be ready to withstand landing parties from a hostile fleet must not fall below a minimum of 6,500 mobile troops, namely: Three full-strength regiments of Infantry, a squadron of Cavalry, and a battalion of Field Artillery, beside the necessary Coast Artillery troops to operate the guns which protect the entrances to the canal. Within the past five years the Nation has also decided to make its great naval base for the protection of American interests in the Pacific at Pearl Harbor, on the Island of Oahu, Hawaii. Dry docks, repair shops, and other supplies are being placed there by the Navy. The protection of this naval base from attack from behind also requires a mobile garrison (in addition to the Coast Artillery troops which man the seacoast batteries) of not less than six full-strength regiments of Infantry, one regiment of Cavalry, and three battalions of Field Artillery. There still remains also the necessity of maintaining a garrison in the Philippines at its present strength of about 11,000 men, exclusive of the native troops.

Hitherto, as I pointed out last year, there has been no difference of policy in the treatment of the organization of these various foreign garrisons from that of the troops within the United States. The difference of position, however, is vital, and the foreign garrison should be prepared to defend itself at an instant's notice against a foe who may command the sea. Unlike the troops in the United States, it can not count upon reenforcement or recruitment. It is an outpost on which will fall the brunt of the first attack in case of war. The historical policy of the United States of carrying its regiments during time of peace at half strength has no application to such foreign garrisons.

The plan of readjustment of these conditions in the Philippines, pointed out in my last report, has been carried out during the past

year. The former garrison of 12 regiments of Infantry and Cavalry at reduced strength has been replaced by a garrison of 6 regiments at full strength, giving a garrison of much greater effectiveness, at an estimated economy in cost of maintenance, of considerably over $1,000,000 per year. The 6 regiments—4 of Infantry and 2 of Cavalry—which constitute the present garrison of those arms, have an authorized strength of 8,592 effective combatants, as against the 7,536 effective combatants of the former 12 regiments. This new garrison is designed to be permanent. Its regimental units, instead of being transferred periodically, as heretofore, back and forth from the United States, will remain continuously in the islands. The officers and men composing the units will, however, serve a regular tropical detail, as usual. There will thus be no greater hardship imposed on the personnel, but, on the contrary, it will be much easier than heretofore to regulate tropical service with absolute equality among the men and officers of the Army.

The six regiments which have thus been relieved from Philippine service have been returned to the United States and are available pro tanto to furnish the Panama and Hawaiian garrisons, above mentioned, as fast as the barracks in those places are made ready for their occupation. I strongly urge the completion of these latter two national outposts as by far the most important items of military expenditure for the immediate future. The locks and machinery at Panama have already reached a condition of extreme vulnerability in case of sudden attack. One regiment of Infantry (the Tenth) has already been sent to the Isthmus and is quartered in some buildings which have been vacated by the construction force. No greater force can be sent there nor can this one regiment be raised to full strength until new quarters are constructed for them. In view of the time necessary for such construction, it is of the highest importance that such work should be begun at once. On the other hand, the base at Pearl Harbor is of far greater strategic importance for the protection of our entire Pacific coast from attack than any of the positions on that coast now so strongly fortified. No naval enemy could make a serious effective attack upon any portion of our Pacific coast, unless it had first reduced our position at Oahu, threatening its flank. Valuable stores of naval material are already there, as well as a large portion of the seacoast guns. Quarters for the men who are to protect those stores and that ordnance from falling easily into the hands of a land attack should be pushed to completion as rapidly as possible. In these respects the Executive has pushed ahead as far as limitations of its power permit. Substantially all of the troops which proper sanitation permits being stationed at those places are there now.

Army reorganization at home.

Simultaneously with this reorganization of the foreign garrisons, steps have been taken to organize the Army within the United States on a tactical basis. Hitherto the Army has been administered according to a purely geographical organization. The mobile troops are scattered in about 49 posts, situated in 24 different States, containing an average strength of less than 700 men in each post. The separated units have had no higher organization than the regiment; brigades and divisions have been unknown. In case of war, the first task has always been to create an army out of these scattered units. Such a thing as team training between the different arms of the service under such a system has been impossible.

Plans are now practically complete, and orders substantially prepared for issue, under which these disassociated units will be united into a tactical organization of three Infantry divisions, each consisting of two or three brigades of Infantry, and so far as practicable, a proper proportion of divisional Cavalry and Artillery. In addition to these, there will be several separate brigades of Cavalry available for the formation of a Cavalry division. A series of conferences with the general officers of the Army who will have in charge the carrying into effect of this new organization has been planned for the coming winter, and, as soon as possible thereafter, orders will be issued and the organization made effective.

Of course, the extent to which this reform can be carried by the Executive is limited. The scattered units can be brought under a proper organization, but they will remain physically scattered until Congress supplies the necessary funds for grouping them in posts which will be more concentrated. Until that is done the present difficulty of drilling our troops in large masses and thus training them for the proper teamwork can not be removed, but we will at least have an army which will know its own organization, will be inspected by its proper commanders, and to which, as a unit, emergency orders can be issued at any time. The time now necessary at the outbreak of war to organize the Regular Army will be dispensed with.

Moreover, this organization, which in many respects will necessarily be a mere skeleton, will furnish a guide for future development to follow. The separate regiments and companies will know the brigades and divisions to which they belong. They will be maneuvered together, whenever maneuvers are established by Congress, and the gaps in their organization will indicate the pattern into which new troops can be filled as the Nation grows larger and new troops are required.

Concentration of posts.

By House resolution No. 343, I was called upon by the House of Representatives to furnish them with certain detailed information concerning the diffusion of the mobile Army in its present posts, and also as to the saving in cost of maintenance which might be accomplished by a more concentrated system. In answer to this call, I caused a careful study of the subject to be made by the War College, and embodied the results of its work in a reply sent in to the foregoing resolution by me on January 25, 1912. This document, which is attached to this report as Appendix B, indicates the careful study and matured views of the War College and General Staff upon the principles which should govern the strategic location of our Army in relation to the frontiers of this country, and in relation to its proper maintenance and recruitment. In consequence of this information, Congress enacted, as a portion of the Army appropriation Act, a provision to the effect that hereafter no portion of the funds thus appropriated shall be expended for permanent improvements at any Army post which has been or may in future be ordered abandoned by the President.

Army reserve.

One of the most important defects pointed out in my last year's report was the absence of any Regular Army reserve. It has been our historical policy in the past to keep the regiments of the Regular Army in time of peace at only about half the strength in enlisted men requisite for its complement of officers. At the same time there is no provision made by law for filling the ranks of these regiments in case of war. When the Spanish War broke out the efficiency of many regiments was greatly injured by the necessity of throwing into them a large number of perfectly raw recruits, and in order to fill the ranks of other regiments it was necessary to consolidate two regiments into one. Such a system postulates the development of a reserve force of trained soldiers which, on the outbreak of war, can be called back from their civil occupations to bring our Army up to its full strength and to keep its ranks full during the inevitable losses of the first engagements. A reserve system is in effect in the armies of practically all nations of the civilized world except our own. It has also been shown by experience to be the most economical and effective way of creating a citizen army, the men of which in time of peace will be free to perform the activities of civil life and be no drain upon the treasury of their country.

I am very glad to report that Congress enacted as a part of the Army appropriation Act last summer legislation looking to the creation of such a reserve for our Regular Army. The former term of enlistment for three years, all of which was spent with the colors, has been changed to an enlistment for seven years, four of which are to be spent with the colors and three as a reserve. There is also a pro-

vision which permits a soldier to apply voluntarily for transfer to the reserve at any time after three years with the colors. Provision is also made for the voluntary enlistment of veterans in the reserve for a period of three years. No provision is made for any payment to reservists, except in the case of war, when they will receive $5 per month for the time which they have hitherto served in the reserve. While the reserve created by this bill is far from perfect, it is in my opinion a long step in the right direction, and I believe that it can be made the beginning of a permanent reserve system. The most serious defect in my opinion is that it creates too long a period of service with the colors. I believe, as I indicated in my last report, that our own experience, and the experience of nations in Europe, have shown that the soldier can be adequately trained for his duties in considerably less than three years. Thereafter economy demands that he should be transferred to the reserve as promptly as possible, except for the number of trained men in the shape of noncommissioned officers and special privates who are retained as a nucleus for the training of future recruits. I think our experience will gradually lead to a shortening of the period of training with the colors, and that by so doing we will greatly improve the character of the young men who will come into the Army, while in no way diminishing the effectiveness of their training. Nevertheless, I believe that a reserve can be initiated under the present law, and every effort is being made to insure that this result will be accomplished.

Paper work of the Army.

Efforts to reform the methods of paper work in both the department and the Army have been progressing simultaneously. The President's Commission on Economy and Efficiency is still engaged in an investigation of the paper work of the department, principally in The Adjutant General's office, and it is believed that through its efforts and advice much simplification can be effected.

A plan, formulated by the General Staff, for simplification in correspondence and record work was approved by me on July 11, 1912, and published in General Orders, No. 23. The new system, as shown by repeated tests, will save at least 25 per cent of the time of the clerk or typewriter engaged in doing the writing, to say nothing of the greater ease and time saved in reading the correspondence for all through whose hands it passes. It also permits flat filing, instead of the folded filing formerly in use.

Much has also been accomplished through the work of the General Staff in the way of simplification and reduction of returns and reports required to be prepared by the Army for the records of the War Department. A new pay roll, which is one of the principal papers prepared by organization commanders, has been adopted, and it is estimated

that the amount of time and labor necessary to make out this pay roll is about one-third of that involved in the preparation of the old roll. Simpler methods of post, regimental, department, and division returns have been adopted, and the frequency of the rendition of such reports has been reduced; papers formerly forwarded to the War Department through department and division headquarters are now forwarded direct. A system of property accountability, based on the unit equipment of organizations, is now being considered, and when put into operation will simplify materially the accountability for property by organization commanders. The subject of modifying the present bimonthly muster roll, so as to eliminate a very large amount of useless and time-consuming duplication and repetition, has been the subject of very careful study and will be put into effect during the coming winter. I have personally examined and tested the new proposed system, and believe that it will safeguard the records of the Army with at least the security of the old system and will save an enormous amount of time and effort. When the changes thus under consideration have been made, it is estimated that the paper work of the line of the Army will be reduced by at least 50 per cent.

Owing to the various reforms which have thus been set in motion, it has been found possible in the department to effect a reduction in the classified service of 78 positions. This reduction has been accomplished by not filling vacancies created by the ordinary casualties of the service, such as deaths, transfers, and resignations.

The direction of the foregoing reforms.

All of these foregoing changes in Army organization and in department administration are in the direction of economy and efficiency. Except for the slight increase necessary to garrison our outposts in Hawaii and Panama, they do not call for a larger army, but they do tend to produce a much more effective one. The only substantial new appropriations required are those which are necessary to complete and man the fortifications and barracks at the naval base in Hawaii and at the Isthmus of Panama. The expenditures proposed at those places are so vitally necessary from the standpoints of national military policy, that it is earnestly hoped that appropriations therefor will be promptly made.

ARMY LEGISLATION.

Consolidation of supply departments.

In addition to the legislation for the reserve, which I have discussed above, the Army appropriation act passed August 24, 1912, provided for the consolidation of the office establishments of the Quartermaster General, the Commissary General, and the Paymaster General of the Army into one bureau of the War Department, to be known as the Quartermaster Corps, and the consolidation of the Quartermaster's, the

Subsistence, and Pay Departments of the Army into a single department, to be known as the Quartermaster Corps of the Army. This reform had been previously recommended by the department, and it is believed that both economy and efficiency will be greatly promoted by its enactment. On August 24 Brig. Gen. James B. Aleshire, formerly Quartermaster General, was appointed Chief of the new Quartermaster Corps, and the plan submitted by him for putting into effect the consolidation provided by the act was approved by the department September 26, 1912, to become effective November 1, 1912, in the United States and on January 1, 1913, in the Philippines.

The chief of the Quartermaster Corps reports that it will be possible for him to make a considerable reduction in the number of positions in the office force of the Quartermaster Corps of the War Department. This will, however, be accomplished not by summary dismissal but by transfer to other branches of the service, where practicable, and by not filling vacancies as they occur from time to time until the entire force has been reduced by the proper amount. It is not yet possible to give more than an approximate estimate of the economies which will be made throughout the service of the Army at its various stations, but the Chief of the Quartermaster Corps estimates that it can be safely put at a very considerable amount, and that, in addition, the efficiency of Army administration will be greatly and progressively improved.

General Service Corps.

As a logical adjunct of the newly consolidated Supply Corps, the Army act also provided for the General Service Corps of enlisted men, to do for the Army such work as that of clerks, engineers, firemen, overseers, carpenters, blacksmiths, packers, teamsters, and laborers, which work is now being performed by a large force of civilian employees and soldiers detailed on extra duty. This legislation has also been recommended for several years by the War Department, and it is estimated that it will result in both economy and efficiency.

Detached service restricted.

As a part of the same appropriation Act, Congress has also passed a provision restricting, under severe penalty, the detachment of officers below the rank of major from duty with their companies, troops, or batteries, unless they shall have been present for duty with such organizations for at least two out of the preceding six years. I am in thorough sympathy with the purpose of this law, and had already, by administrative action, taken drastic and, as I believe, effective steps in the same direction as that in which it aims.[1] While I believe that this reform should have been left for its completion to executive action, and while

[1] See par. 18, Special Orders No. 39, W. D., Feb. 15, 1912; also changes No. 8 Army Regulations, par. 40, dated July 10, 1912.

the provisions of the new statute are in some respects so mechanical and inelastic that they are likely to create considerable embarrassment in administration, every effort is being made to carry out the law with zeal and the fullest sympathy with its object.

THE NATIONAL GUARD.

The pay bill.

Outside of the Regular Army, the only force of men who have received any military training existing in the United States to-day is the National Guard. Under existing law, this force in organization and equipment has been assimilated to the Regular Army. It is receiving already from the Federal Government certain financial assistance in the shape of equipment and pay for maneuvers, and its officers and men are being trained with the aid of regular officers loaned them from the Regular Army. The soldiers of the National Guard have, in recent years, reached a stage of discipline and training far higher than that which existed at the outbreak of the Spanish War. The training which they now undergo imposes upon their officers and men a burden of expense in effort and time which they assert, and which there is every reason to believe, can not be increased without further direct assistance in the form of pay from the Federal Government. On the other hand, from the standpoint of the Federal Government, such pay from the National Treasury would not be justified unless it produced an equivalent in additional efficiency and availability for Federal purposes on the part of the National Guard.

To-day the National Guard is treated by law solely as the Organized Militia. Its use by the Federal Government is limited to the comparatively narrow functions of executing the laws of the Union, suppressing insurrection, and repelling invasion. The Attorney General has formally advised me that it can not be used outside of the limits of the United States. Thus, as militia, it can not be used for general military purposes, and the experience of the Nation in the War of 1812 and during the first few months of the Civil War showed conclusively the unavailability of militia even for military purposes within the United States when such use was attempted. The situation, briefly, therefore, seems to be this: We have in existence a State force of over 100,000 men, who are eager and ambitious to be available for national service as the first line of a citizen army in case of war; such legal limitations as they are under in their present status as militia they are willing to waive, and, indeed, are training with the ultimate object of general military service in case of need. On the other side, except for them, the Nation is without any available body of citizens trained for military duty and is sorely in need of such a body to constitute the first line of a citizen army.

The Constitution confers ample power upon Congress to raise citizen soldiery, other than the militia, for general military purposes, and all of our successful wars have been carried through by the aid of such volunteer soldiery, raised and trained, under great disadvantages, after the outbreak of hostilities.

The problem, therefore, is simply to coordinate these two needs: To see that such organizations of the National Guard and such of their officers and men as receive pay from the Federal Government in time of peace, while retaining their status as militia in time of peace, can be transferred and made available as a general military force, and not militia, in time of war. In other words, if we are going to pay our National Guard we must see to it that they are trained in time of peace, so that they will be fit for general war purposes, and then, when war comes, we must transform them from militia into volunteers. To pay them without providing now for adequate training would be to throw the money away; to try to use them in war as militia would be to disregard some of the most costly and bloodiest experiences of our history.

Such a program comes as near to preparation for emergency of a trained force of citizen soldiery as we well can come, under our existing institutions. It reserves to the States their constitutional power in respect to the militia, their right to "the appointment of the officers and the authority of training the militia according to the discipline prescribed by Congress." (Constitution, Art. I, sec. 8.) The governors can appoint such officers as they see fit, but no officers or men should receive Federal pay unless they attain to a standard prescribed by the Federal authorities as sufficient to make them fit for war. And when war comes, the entire force of such of them as have received this Federal pay should be available for transfer by the President, on the consent of Congress, into the general military forces of the United States.

A militia pay bill was originally introduced into Congress, to which I pointed out, before the Military Committee of the House, my objections, in that it did not meet the foregoing requisites from the standpoint of the Federal Government. Subsequently a series of conferences has been had with the officers of the National Guard, at which, I am glad to report, there was evidenced an earnest and whole-hearted desire to meet my objections and to produce a bill which would fulfill the conditions which I have above set forth. The draft of a bill was agreed on at those conferences, which I believe substantially meets the situation and if passed in the form thus agreed upon will, in my opinion, go far toward meeting one of the greatest military needs of our Government, namely, the creation of a trained and definitely organized nucleus for a citizen army.

Progress of the Organized Militia during the past year; joint maneuvers.

The present strength of the National Guard or Organized Militia, according to the latest reports, is 121,852 officers and enlisted men. During the 10 years that have elapsed since the passage of the militia law repealing the archaic statute of 1792 and placing the militia upon a basis of organization and equipment similar to that of the Regular Army there has been an increase of but 5,305 in its strength, indicating that this force has about reached its limit of size under the present laws. The immense increase in its efficiency for field service, however, was clearly indicated in the joint maneuvers which were held during the past summer. One hundred and three thousand four hundred and fifty-three officers and enlisted men of the National Guard participated in field or camp service during the past summer, a greater number than ever before, and 67,280 of this number participated in maneuvers with the Regular Army. The maneuver campaign plan previously used in Massachusetts was given general application as far as practicable. In the five maneuver campaigns conducted this year conditions closely resembling actual field service were obtained by starting opposing forces several days' march apart and by having these forces approach and locate each other under war conditions. By this means the proper use of the different arms was required, camps were made daily on new ground, the delivery of supplies at new places was necessary, and the instruction took place daily over new and unfamiliar ground; in addition, the use of semipermanent camps, with their many conveniencies and lack of instruction, was avoided. The plan brought forth increased interest and instruction to the troops engaged and proved very satisfactory.

The usual camps of instruction for officers were held during the year, and were attended by over 3,000 militia officers; in addition, 24 officers of the Field Artillery pursued a month's course at the School of Fire for the first time, and 7 medical officers attended the initial course of the field service medical school, with gratifying results in both cases. Forty-five militia officers attended the garrison or service schools of the Regular Army, and of this number 22 were found proficient in all subjects.

NATIONAL VOLUNTEERS.

I again earnestly recommend the passage of the volunteers' bill, providing the necessary legislation under which, in time of war, a force of national volunteers can be created without delay. Even if a national militia pay bill is adopted which will create out of the National Guard an effectively trained force of citizen soldiery, it must be remembered that such a force will furnish at present figures only about 100,000 men, a far smaller force, when added to the

Regular Army, than we have been forced to raise in any of our past wars. Moreover the National Guard consists chiefly of infantry. It is very disproportionately weak in cavalry, artillery, and special service troops. In any serious national emergency not only would these deficiencies in its constituency have to be filled by volunteer troops, but a very much larger citizen army would have to be raised out of volunteers. It is the height of national shortsightedness not to have upon our books an adequate law which will govern and provide for the raising of such a volunteer force in time of war. To leave the framing of such legislation to the hurry and excitement attending the outbreak of a war is most reckless. There is now pending in Congress a bill which makes such a provision, and which, I believe, is admirably adapted to meet the exigencies which would be presented in case of war. Its passage has been urged again and again by this department. It would not entail a dollar's expense upon the Government at this time, or in the future until war comes. But when war does come the methods therein directed are in accordance with the best military judgment as to what they ought to be. I again earnestly urge its passage.

COUNCIL OF NATIONAL DEFENSE.

I renew my recommendation for the establishment of a council of national defense, containing representatives from both the War and Navy Departments, the Army and the Navy, and from both Houses of Congress. Such a bill has been favorably reported to Congress, and its passage has been repeatedly urged by both departments. I believe that its passage would tend to bring the Executive and Legislature into more harmonious and intelligent relations on the vital and technical questions which underlie our national defense, and that the recommendations of such a council would thus greatly facilitate the work of Congress on this subject.

MILITARY PRISON ADMINISTRATION.

In pursuance of the plan for the radical revision and reform of our system of military prison administration, outlined in my last annual report, there has been a classification of offenders, and during the past year those convicted of purely military offenses and those convicted of statutory crimes have been confined in separate prisons. Men confined for purely military offenses have been designated as "general prisoners," instead of "military convicts," the designation heretofore used. The enactment of legislation was recommended, both by the Secretaries of War and the Navy, in their last annual reports, for the establishment of a detention barrack system in this country for military and naval offenders, on lines substantially like

those of Great Britain, which have been so conspicuously successful in maintaining discipline in the British Army and Navy, in repressing the repetition of military offenses, and under which many persons convicted of purely military offenses have been returned to the colors on their release and have served their country honorably thereafter, instead of being converted into hardened and degraded characters and made outcasts.

While legislation of this character was not enacted at the last session of Congress, the existing law was so modified that hereafter a deserter in time of peace does not necessarily lose his citizenship or his right to become a citizen. The act also repeals the law which forbade the reenlistment or return to the Army of persons who have deserted, or whose previous service had not been honest and faithful. This amendment permits the department, so far as legal restrictions are concerned, to save to the service men who have shown by their good conduct while under sentence or in subsequent service that they have no criminal tendency and will probably become good soldiers. Even under our existing prison system and the degradation and stigma which it unwisely, as I believe, imposes upon the offender, it appears from the records of 1910 and 1911 that 40 per cent of the men who deserted during the first year of their enlistment have subsequently made good in the service. If such results could be obtained under existing conditions, it is reasonable to expect that under the salutary influences of the detention-barracks system a much greater number of men could be saved to the Army and the country.

MILITARY ACADEMY.

On September 1, 1911, there were 575 cadets on the rolls of the Military Academy and 57 vacancies. On September 1, 1912, there were 558 cadets on the rolls and 79 vacancies. The cadets were divided among the four classes as follows: First class, 98; second class, 113; third class, 194; fourth class, 153. I renew the recommendation made in my last annual report for legislation which will enable the academy to be kept at its full capacity. Such a provision was inserted in the Military Academy bill as it was reported from the Senate Committee on Military Affairs but was stricken out in conference.

RESERVE SUPPLY OF FIELD ARTILLERY GUNS AND AMMUNITION.

Our supply of Field Artillery material continues to be so far short of what it should be that I again call attention to this condition. Such material can not be extemporized. It requires months and even years to manufacture it, and in time of war it can not be purchased abroad. The amount which we have been permitted to accumulate would be insufficient for a single engagement of the character of the

engagements in either the Russo-Japanese or the present Balkan war.

SEACOAST DEFENSES; INSULAR POSSESSIONS.

I have already mentioned the necessity of providing mobile garrisons for the protection of our outposts at Hawaii and Panama. The seacoast armaments of those outposts and our other insular possessions have been progressing as follows:

Island of Oahu.—With the funds now appropriated it is expected that by the end of the fiscal year 1913 the fortifications for the defense of Honolulu and Pearl Harbor will be advanced to approximately 90 per cent of completion.

Panama Canal.—The project for the defense of the canal contemplates, first, strong fortifications at each terminus of the canal; second, adequate submarine mine defense; third, construction of defensive line of field fortifications for the protection of the more vulnerable portions of the canal from injuries by raiding parties; fourth, the necessary filling, clearing, and drainage to secure healthful surroundings for the troops detailed for the defense of the canal; and, fifth, the establishment of the necessary communications for the prompt employment of the mobile garrison against any force which may land at a distance from the coast fortifications. Plans for most of the batteries of the primary armament have been completed; the excavations or foundations of over 50 per cent of these have been undertaken and the concrete construction of about one-half is already under way. The armament for these batteries is being manufactured, and the first delivery of guns and carriages may be expected in June, 1913.

Subig and Manila Bays.—The fortifications of Subig Bay are completed. The fortifications of Manila Bay are about three-fourths completed, and with the funds already appropriated can be advanced to about 90 per cent of completion.

Guantanamo.—A few emplacements have been provided here for medium and rapid-fire guns, about $285,000 having been expended for that purpose and for the purchase of guns and carriages, and for the erection of structures for the mining system. The project for the defense of this port has been held in abeyance, awaiting an appropriation for the naval base, which was finally made during the last session of Congress. The strategic value of the locality with reference to the naval control of the Caribbean Sea, taken in connection with the approaching completion of the Panama Canal, renders it advisable that its complete defense be now considered by Congress, and the project for that defense has already been made by the National Coast Defense Board.

Other possessions.—The remaining ports recommended by the National Coast Defense Board were San Juan, P. R.; Kiska Island, Alaska, and Guam. No work has been authorized by Congress at any of these places.

ENGINEERING DEPARTMENT.

River and harbor improvements.

The total amount actually expended under the direction of the Chief of Engineers, in connection with the improvement of rivers and harbors during the fiscal year ended June 30, 1912, was $35,719,403.62, being $3,156,941.53 more than corresponding expenditures for the fiscal year 1911. The various items for which the expenditures were made are given in the annual report of the Chief of Engineers, and the different projects for river and harbor improvements are there described in detail, giving the history of each project and a description of the work which has been done from the inception of the improvement to the close of the fiscal year, together with the statistics of the commerce of the locality and other pertinent information.

Raising of the battleship "Maine" from Habana Harbor.

In my last annual report I reported as to the progress which had then been made in the work of disclosing the wreck of the battleship *Maine* on the bottom of Habana Harbor. The appropriations made up to that date were insufficient to complete the work so as to permit the wreck to be fully exposed and to permit the question of the cause of the explosion of the *Maine* to be either solved or clearly shown to be insolvable. On my recommendation the President urged Congress to make a further appropriation for this purpose, and on December 22, 1911, such appropriation of $250,000 was made. As a result the work was prosecuted until the cause of the explosion was discovered and proved beyond any doubt. A board of inspection appointed for the purpose, consisting of Rear Admiral Charles E. Whelan, Chief Constructor Richard M. Watt, Commander Joseph Straus, and Commander Charles F. Hughes, of the United States Navy, and Col. William M. Black, of the Corps of Engineers, United States Army, reported finally its findings, that the injuries to the bottom of the *Maine*, above described, were caused by an exterior explosion of a charge of low form of explosive between frames 28 and 31, strake B, port side of the ship; that this resulted in igniting and exploding the contents of the 6-inch reserve magazine A 14 M; and that a more or less complete explosion of the contents of the remaining forward magazines followed and resulted in the destruction of the vessel. There was thus a highly satisfactory conclusion of the expensive and skillful work performed by the Corps of Engineers in laying bare the wreck of the *Maine* in Habana Harbor, where she had lain for

over 13 years. The long-vexed question of the cause of the explosion has been settled in the most conclusive way, and the judgment of the Naval Court of Inquiry of 14 years ago has been thus finally shown to have been correct.

Sixty-six bodies were recovered during the year and were buried in Arlington National Cemetery, after an appropriate memorial service at the south front of the State, War and Navy Building, on March 23, 1912. The mainmast was sent to the Arlington Cemetery for erection as provided by law; the after turret and two 10-inch guns were given to the Cuban Government; and all personal property and other articles of value were turned over to the Navy Department. The after portion of the wreck, after being raised and floated, was towed to sea and sunk with appropriate ceremonies on March 16, 1912. The work of restoring the site in the Harbor of Habana was begun in February, 1912, and is now in progress, and the total work is about 90 per cent completed.

NAVIGABLE WATERWAYS AND THEIR APPURTENANT WATER POWER.

The full utilization of our waterways for navigation and the development of the water power thereon present one of the most pressing problems before the country and one of the most practical in the administration of the War Department. It is really a single problem, for the two subjects are necessarily connected and should be coordinated in their treatment. The development of water powers is, in the case of most of our navigable streams, a mere by-product of the development of navigation, and far-sighted protection of the public interest requires that both should be treated as mutually dependent.

Most of the navigable rivers of this country are comparatively long and shallow. In order that they may be made fully useful for navigation, modern science has developed a method of improvement, known as canalization or the slack-water method, which consists in building a series of dams and locks, each of which will create a long pool of deep navigable water. At each of these dams there is usually also created water power of commercial value. If the value of the water power thus created can be made available for the further improvement of navigation in the stream, it is manifest that the improvement will be much more quickly effected, on the one hand, and, on the other, that the burden on the general taxpayers of the country will be very much reduced. There is thus offered a method by which the enormous size of our river and harbor appropriations can be eventually materially reduced.

It is also equally clear that inasmuch as the water power thus created is a by-product or incident to a general scheme of waterway improvement within the constitutional jurisdiction of the Federal

Government, the regulation and control of such water power lies also within that jurisdiction. That the Federal Government has the right to construct dams for the improvement of navigation, and a proprietary interest in the water power developed by the structures so built is settled beyond question. (Green Bay Canal Company *v.* Patten Paper Company, 172 U. S., 58; 173 U. S., 190; 29 Op. Atty. Gen., 173, 185.) It seems equally clear that what the Government may do of itself it may do by an agent, and may, therefore, utilize and adopt for the purposes of navigation a dam allowed to be built by private capital upon fair and proper terms between the two interests as to the value of the water power thus created. Applications are being constantly made by private parties for permission to build dams in such rivers for the purpose of developing water powers. These applications usually take the form of bills granting the consent of the National Government to the construction of such a dam, the construction being made subject to the terms of the general dam act (act of June 23, 1910, 36 Stat., 593). An examination of this act has convinced me that it is insufficient to adequately protect the interests of the Federal Government in the situations which I have just described, and that it does not permit the Federal Government, as a condition of its permit, to require that a part of the value of the water power thus created shall, under proper circumstances, be applied to the further general improvement of navigation in the stream. Such bills for permits in navigable streams are generally referred to the Secretary of War and the Chief of Engineers for examination and report. Accordingly I directed that the Chief of Engineers, in reporting upon such applications, should report as to the following questions:

1. Will the dam, for the construction of which the permit is asked, create water power of any pecuniary or commercial value?
2. Whether, with the passage of time and the development of the surrounding country, this commercial value will probably increase in the future or not.
3. Whether the stream on which the proposed dam is to be constructed is now navigable or likely at any time in the nation's future to be improved for navigation by the National Government.
4. Will the dam, in itself, or in connection with the lock for the construction of which the permit is asked, be a navigable work, so as to constitute a direct instrumentality in the navigation of the river?

Thereafter, through the reports answering these questions, I found that in nearly every case the dam proposed to be authorized would develop water power of considerable pecuniary value, and that this value might confidently be expected to increase with the growth and development of the contiguous territory. I further found that, in practically all such cases, the proposed dam was either planned for, or susceptible of being made, an instrumentality in the system of navigable improvement of the stream, which the

nation was either now adopting or would undoubtedly adopt in the not distant future. Accordingly I recommended that, thereafter, no such bills should be passed without containing suitable provisions which would empower the Federal Government to regulate the water power thus developed, and to charge fair and suitable compensation for the purpose of applying such compensation to the future development of navigation in the stream. I append hereto as Appendix C a copy of a letter written by me to the chairman of the House Committee on Interstate and Foreign Commerce, setting forth the views of the War Department on this question.

None of the foregoing bills has since become law, although one such bill, purporting to grant permit for such a dam in the Coosa River in Alabama, was passed by both Houses of Congress and was then vetoed by the President, upon the ground that it did not contain the provisions thus suggested. I annex hereto, as Appendix D, a copy of the President's message of disapproval, setting forth the views of the Executive upon this question. In my opinion, no question now before the Government is more important than the attainment of a proper solution of this question. Such a solution will coordinate the development of our great rivers and the development of their incidental water powers and will thus realize for the benefit of the people of the country, in the shape of the improvement of their navigation, this great national asset contained in their incidental water powers. I respectfully urge that the general dam act be amended by providing, in substance, that, in administering the provisions of the said act, the Secretary of War be authorized to require, as one of the conditions and limitations of the privilege granted, that the grantee pay periodically to the United States such sums as the Secretary of War may fix as being reasonable under all the circumstances, making due allowance for construction, maintenance, renewal, and depreciation charges, and a reasonable return to the grantee, the proceeds to be used for the development of the stream in respect to which the privilege is granted or the waters connected therewith.

TROY DAM.

The reconstruction of the Erie Canal, now being made by the State of New York, has rendered necessary the reconstruction of the State dam in the Hudson River near the city of Troy in order to enlarge the channels and locks at that point sufficiently to accommodate the new traffic which will use the enlarged canal. For a number of years prior to 1910 the authorities of the State of New York repeatedly urged upon Congress that it undertake the expense of reconstructing this dam in the interest of this navigation. (Rept. of New York State Engineer, 1905, pp. 35 et seq.; ibid., 1908, p. 12; ibid., 1909, p. 13; Rept. Advisory Board of Consulting Engi-

neers, 1910, p. 34; Gov. Higgins's message to legislature, 1905; joint resolutions New York Legislature, Feb. 23, 1909, and Mar. 10, 1910.) In the year 1909 Congress caused a detailed investigation to be made of the project through the board of local engineers for rivers and harbors, which reported in favor of making the improvement on the conditions—

(1) That the existing water-power rights or privileges should be extinguished by the State of New York; and

(2) That the Federal Government should be empowered to lease all surplus water-power created by the new federal dam.

Congress then, in the river and harbor act of June 25, 1910, appropriated $1,350,000 for making the improvement upon the conditions named in this report. These conditions were thereupon accepted by the New York State authorities, and the New York Canal Board on November 22, 1910, passed a resolution terminating the existing water privileges affected by the improvement. Thereupon my predecessor at once undertook the work of improvement. On January 1, 1910, a new State administration having been inaugurated in New York, an attempt was made to rescind the action of the New York Canal Board by resolutions passed on April 28, 1911, by the reconstituted New York Canal Board. Work on the project was thereupon suspended by my predecessor in order to obtain the opinion of the Attorney General as to the legal effect of the attempted rescission and to enable the New York authorities, if they desired, to apply to Congress for a modification of the act under which the work was to be done.

Shortly after my accession to office the Attorney General rendered an opinion (29 Op. A. G., 173), in substance, to the effect that the appropriation was available in spite of the attempted rescission by the new authorities of New York, and, after waiting a reasonable length of time without those authorities having taken any step to obtain a modification from Congress of the conditions of the act of 1910, I directed, on February 17, 1912, that the work of constructing the dam under the law of 1910 should proceed.

I annex hereto as Appendix E to this report my correspondence with the governor and attorney general of the State of New York, which sets out fully the various steps of the transactions. It seemed very clear to me that no adequate reason existed for a change in the policy of this great improvement decided upon by Congress after mature deliberation, and that the conditions imposed by Congress were not only within its constitutional powers, but were fair and reasonable under the circumstances of the case. The report of the engineers upon the project showed that the proceeds of the lease of the water power which will be produced by the new dam will not be nearly sufficient to meet interest or sinking-fund charges upon the

amount of the appropriation for the dam. The plainest rules of justice entitle the United States, which is about to incur the great expense of making this improvement, to this slight reduction of cost arising from the utilization of this incidental by-product of the improvement. It has also become very clear from the reports of the local engineers that any further delay or vacillation of policy would greatly jeopardize the commercial interests of the State of New York by making it probable that this gateway to the canal commerce of New York would not be finished in time for the opening of the new Erie and Champlain Canals.

THE INTERNATIONAL WATERWAYS COMMISSION.

The international commission for which provision was made in the river and harbor act approved June 13, 1902, to investigate and report upon the condition and uses of the waters adjacent to the boundary between the United States and Canada has completed the work originally assigned to it, with the exception of its final report upon a dam at the outlet of Lake Erie. It has been delayed in that work by the illness and absence in Europe of one of the Canadian engineers, but expects to complete it at an early day.

By the treaty between the United States and Great Britain dated April 11, 1908, this commission was charged with the additional duty of ascertaining, marking upon the ground, and delineating upon modern charts a portion of the international boundary. Although for this duty it reports to the Secretary of State, appropriations for the work of the commission are made under the War Department. The last appropriation made by Congress covered the period of six months ending December 31, 1912, and provided that a report as to the progress of the work should be made by the American commissioners to Congress at the beginning of the present session. It is believed that this report, which has been submitted to me and will be duly forwarded to Congress, will show the propriety of continuing the existence of this commission until April 1, 1914, by which time its work can be completed. Additional appropriations aggregating $25,000 will be required for this purpose.

ALASKA ROAD WORK.

It appears from the report of the Board of Road Commissioners for Alaska that the past season was an unfavorable one for road work in most parts of the Territory. Heavy and incessant rains in the late summer and fall taxed the resources of the board to keep the road from the coast to Fairbanks open and passable, and at times the road seemed in danger of utter destruction. The suspension of traffic on the Copper River Railroad for several weeks, due to washouts,

made it doubly important to keep the wagon road open. The report shows that the approximate total mileage of wagon road, sled road, and trail constructed by the board since its organization is as follows: Wagon road, 847 miles; winter sled road, 651 miles; trail, 1,584 miles; and, in addition, the board has staked each year several hundred miles of trail for winter travel only across exposed and treeless sections of the Territory.

The Board of Road Commissioners expresses the opinion that wagon road construction is of paramount value in the development of the Territory and, under present conditions, of even greater importance for the Government to direct and foster than the construction of a railroad.

The act creating a legislative assembly in the Territory of Alaska, passed during the last session of Congress, provided for the creation of a railroad commission to conduct an examination into the transportation question in Alaska, and to report its conclusions to Congress at the beginning of the present session.

MARKING GRAVES OF CONFEDERATE SOLDIERS AND SAILORS.

The work of locating and marking the graves of the soldiers and sailors of the Confederate army and navy who died in Federal prisons and military hospitals in the North and were buried near their places of confinement, provided for by the act of Congress approved March 9, 1906, and continued in full force and effect by subsequent joint resolutions of Congress, the last of which extended the time to December 23, 1912, was finished well within the limit of time prescribed, the work being completed and the resignation of the commissioner submitted and accepted on October 23, 1912, two months before the expiration of the time fixed by law. From the appropriation of $200,000 made by Congress for the work there remains an unexpended balance of $51,454.01, to be covered into the Treasury.

A final report has been made by the commissioner, as required by law, and will be submitted to Congress at the present session.

There were five Confederate burial plats cared for under this act which did not come within the provisions of the appropriations for national cemeteries, for the care and maintenance of which Congress at its last session made provision through the Quartermaster's Department.

CIVIL-SERVICE RETIREMENT.

In my last annual report I expressed myself as being heartily in favor of some measure by which employees of the Federal Government might be retired and pensioned when they reached a condition of impaired usefulness after years of faithful service. I earn-

estly renew that recommendation. I regret the attack made against the retirement plan during the last session of Congress, when an effort was made to attach a limited tenure of office rider to the legislative, executive, and judicial appropriation bill. I believe the effect of such legislation would have been to overthrow the merit system. The tendency of the merit system, as established by the civil-service law, is to make service in a classified position under the Government a life work or profession, and some sort of retirement provision follows as a necessary consequence, just as it does in the Army, the Navy, and the judiciary, if the best results are to be secured.

PORTO RICO.

Material prosperity of the island.

The striking material prosperity of Porto Rico continues to increase. The surprising increase of 15 per cent in the external commerce of the island, which was recorded a year ago, was surpassed this year by a further increase of 17 per cent, making a total value of such commerce of $92,631,886, or more than five times the value of the commerce of the island in 1901. Eighty-seven per cent of this trade was with the United States.

Moreover, the record of the internal business and the industrial activities of the island indicate similar progress in almost every direction. The assessed value of its property showed an increase of 9 per cent for the year, and reached a total of $178,275,000. Porto Rico being so largely dependent upon agriculture for her prosperity, it is a satisfaction to note that the output of all of her products was substantially increased and the acreage under cultivation again largely extended during the year. Sugar and tobacco, as usual, held the leading places in the order named. Coffee, which is essentially the small farmers' crop, and which has been slowly recovering its place in the face of difficulties since the hurricane of 1909, showed last year the largest crop in the history of the industry, while, fortunately, the prices maintained in the world's market were sufficiently high to make the trade profitable. The value of the coffee sold abroad during the year was $6,754,913. Fruits, which had no commercial importance in Porto Rico until 1903, were sold to the value of $2,377,762, while coconuts, a small but profitable industry of the island, capable of large extension, sold to the amount of $300,000.

What is even more important than the increase in the larger industries of the island is the fact that some progress has been made in the diversification of industry. The mountainous country and varied climate of Porto Rico make it capable of raising the fruits and vegetables of the Temperate Zone at seasons appropriate to supply them to northern markets. With better transportation

facilities to the United States a very profitable and stable future in such commerce for the island could be assured.

The net revenue of the insular government aggregated $6,665,348.55, the largest collection of any year in Porto Rican history. The available cash balance in the treasury at the close of the year was $1,794,555.46, an increase of nearly 50 per cent over the preceding year. The net bonded indebtedness of the island is $4,139,750.40, or $3.70 per capita, while the per capita wealth is estimated at $275.

Advance in educational and vocational training.

A similar advance in educational work was noted. There were enrolled in the public schools 160,657 pupils, as against 145,525 for the preceding year, and as against 26,000 for the first year of American administration. During the year Mr. Meyer Bloomfield, an expert connected with the Vocation Bureau of Boston, Mass., was selected and sent to Porto Rico to make a study of the needs and a plan for the development of vocational training in the island; and, subsequently, Mr. E. M. Bainter was selected for the position of commissioner of education, with the especial purpose of developing vocational and industrial training. At present Porto Rico lacks an artisan middle class, intermediate between the wealthy sugar planters and professional men on the one side and the poor agricultural laboring class on the other. This investigation has served to emphasize this need, and the energies of the insular government are being bent toward its remedy.

Bubonic plague.

The very high sanitary record of Porto Rico since the eradication of smallpox, immediately after the American occupation of the island, was, unfortunately, broken just before the close of the fiscal year by the appearance of bubonic plague, introduced probably from South American ports. The disease was discovered and identified by the local health authorities, and its presence proclaimed by the insular government with a promptness and frankness which was in marked contrast to the attitude taken under similar circumstances within the United States a few years ago. Their attitude alone probably prevented a serious epidemic. The first case was brought under suspicion June 14; the disease was positively identified on June 18; its presence in Porto Rico proclaimed the following day. To assist the local health service, which had immediately taken energetic measures looking to the eradication of disease, I sent to San Juan, Lieut. Col. Jefferson R. Kean, accompanied by Maj. F. F. Russell and Lieut. F. H. Foucar, all of the Medical Corps of the Army. They sailed from New York on June 22. At the same time, the Surgeon General of the Public Health Service sent to the scene Asst. Surg. R. H. Creel, accompanied by two other medical officers of the same service. In cooperation with the insular health authorities, these officers perfected a plan of

organization for combating the epidemic. This resulted in the establishment of the present plague service. This is a combination of forces of the United States Public Health Service and the Porto Rican Sanitary Service, with Asst. Surg. Creel at its head. This service took over the plague work on July 10. Up to and including June 24, a total of 30 cases with 11 deaths had been reported. Since the close of the fiscal year, the disease has appeared only sporadically, and the last known case was reported on September 11. While it may be expected to appear in the same way for some time to come, the prompt action of the local authorities and the energetic campaign now being waged against it have probably combined to prevent the disease assuming a relatively serious aspect, and effective sanitary and social measures have been undertaken to prevent its recurrence.

Insular legislation.

I am glad to report the passage of several important measures of reform by the insular legislature. A former imperfect sanitary law, to which I called attention a year ago, in an effort to procure an effective sanitary system through congressional action, has been amended by the insular legislature itself, and a nonpartisan and apparently effective service is now in operation in Porto Rico.

The insular legislature has also amended the election law so as to secure secrecy of the ballot and to provide minority representation from each legislative district in the House of Delegates, as well as to require that the delegates chosen are to be actually residents or actual taxpayers in the districts to which they are credited. In this, also, the local legislature followed in part recommendations heretofore made for congressional action. A bureau of labor was also established by the insular legislature to collect and collate information upon the subject of labor and its relation to the industries of the country and to study methods for promoting the material, social, and moral welfare of the laboring men and women in the island.

The passage of these statutes by the insular legislature was most commendable, and it is highly satisfactory to have such reforms accomplished without reliance upon Congress. But, while the insular legislature has thus probably gone to the extent to which it can go under its power, I believe that in any general revision of the organic act Congress should make these reforms permanent by raising the bureau of labor and the health bureau to the dignity of departments of the Government, and by making their heads members of the Executive Council. This can only be accomplished by congressional action.

American citizenship.

The Porto Ricans are still denied American citizenship, and are, on this account, increasingly dissatisfied. This is a grant which has been universally expected in Porto Rico since our original occupation of the island. It has been repeatedly urged by nearly all Americans associated with the insular government or charged with its administration back in the United States. It has also been urged on Congress by successive Presidents. A bill conferring American citizenship upon Porto Ricans has been passed by the House of Representatives. The grant has thus been expected on the one side, and promised, as far as promise is possible, on the other. It has been earned by loyalty. I believe that this favor, now regarded, not without reason, as a right, should be granted. Its denial is the only occasion of serious grievance in the administration of the island.

As I stated in my last report, the grant of citizenship does not, and should not, postulate eventual statehood for Porto Rico. I believe that the great majority of thinking men in the island look forward to a relation between us which will give the Porto Ricans the fullest possible allowance of local and fiscal self-government—a relation eventually similar to that existing between England and her great self-governing colonies of Canada and Australia—with American citizenship as the main bond between the Porto Ricans and ourselves.

The transfer of Federal property to the insular government.

During the year the United States naval reservation in San Juan was divided and, after setting aside the parts necessary to meet the needs of the various branches of the Federal service in the capital, the remainder was transferred to the insular government by proclamation of the President, under the act of June 14, 1910. This action will furnish to the city of San Juan and to the insular government property much needed, including valuable water front. The act of Congress named, however, did not cover Federal property outside the city of San Juan. There is still considerable property held by the Federal authorities and not needed by them which could be beneficially used by the insular government, while there are certain buildings and land in San Juan belonging to the insular government not wholly adapted to their present uses which are desired by the military authorities of the Federal Government. The exchange of these properties, which was fully investigated by the department and recommended to Congress in December, 1909, was covered by a bill (S. 313) which passed the Senate at its last session. The early passage of this bill by the House is most desirable.

Summarizing, then, I believe that the needs of Porto Rico at this time requiring the action of Congress are:

Recommendations.

1. American citizenship for the citizens of Porto Rico. I believe that this grant should be given collectively, with a provision in the law that persons now Porto Rican citizens and not desiring to become Americans may have their wishes respected by registering in some prescribed form before the district courts. This is the form of the measure—H. R. 20048—which has passed the House of Representatives and is now awaiting action by the Senate.

2. A department of labor and agriculture and a department of health and sanitation, coordinate with the other departments of the insular government, the heads of which shall be members of the Executive Council.

3. For the reasons set forth in my last report, I renew the recommendation therein made for a rigorous civil-service law applicable to all nonelective officials in Porto Rico not appointed by the President by and with the advice and consent of the Senate.

4. I again urge my former recommendation that all judges, marshals, and secretaries of the municipal courts of the island, nonelective, should be made appointive.

THE PHILIPPINE ISLANDS.

Our national policy in the light of the accomplishments of a decade of civil government.

It is 14 years since the United States entered the Philippines. It is 10 years since the establishment of civil government there under the organic act of Congress of July 1, 1902. This has been a decade of notable achievement. There is no other instance in history where, after four years of war and insurrection, to over 7,000,000 of an entirely alien race have been so soon given not merely the forms of civil control, but immediate and extensive participation in their own government. Similarly, there is no parallel to the material, mental, and moral progress shown in these 10 years of civil government by so many millions of people, held for centuries in ignorance and, in effect, in political and economic bondage. More has been done in this decade to maintain order, to develop industry and extend commerce, to increase wages and raise the standard of living, to advance education and to provide a common language, to relieve distress and eradicate disease, to train the different peoples of the Philippine Islands in the art of self-government, than was accomplished in the four preceding centuries of their history.

In sanitation, for example, the work done, when the relative difficulties are considered, is as monumental as that which has been

accomplished at Panama. Outside of the few cities, there was practically nothing known in the Philippines of hospitals or physicians. In addition to the ordinary impediments to sanitary progress, due to war and devastation, there was to be overcome the conservatism of backward peoples opposing in their ignorance and superstition every effort toward modern sanitation. And, in addition, there were specific diseases prevalent, and successive epidemics of the most virulent nature had to be combatted.

Smallpox has been eradicated; bubonic plague and Asiatic cholera have been suppressed; a remedy has been found for beriberi, and that oriental scourge of the native population has been already completely suppressed among our native troops, and is now in the course of suppression among the native population at large. The lepers that formerly roamed almost at will have been segregated without adding complete isolation and inhuman treatment to the terrors of the disease. And the cost of all this, and of the much more that has been similarly done, has been borne by the Filipino people themselves.

Again, in the last decade opportunities for education have been extended over the entire Philippine Archipelago. Where before the advent of the Americans there were only 700 public schools, there are now nearly 5,000, with an enrollment of nearly 700,000 Filipino students. Where there was then no attempt at vocational training, there is now an enrollment of over 400,000 pupils in industrial courses, while better opportunities are afforded in this respect by the public schools of the Philippine Islands than by the public schools of any State in the Union. In the spread of English, we are actually giving to the Filipino peoples for the first time a common language. Besides Spanish, there were 24 distinct languages or dialects spoken in the islands, while the variations in the dialects were almost innumerable. To-day more Filipinos speak and write some English than speak and write at all in any other language. Whatever the future state of the Philippines politically, the establishment of a common language must do more for the advancement of their people toward nationality than any other one thing, and the establishment of English as this common tongue must do more for them than any other lanaguge that it would be possible to establish, since this is the most common international language of social and commercial intercourse in the Orient among people outside of the Philippine Archipelago.

The material progress of the last 10 years has been equally notable. Every native industry has been encouraged, and new industries have been introduced. The external commerce of the islands has been more than doubled; the demand for labor has been greatly enlarged; the wages of labor increased; and labor itself has been given a hitherto unknown dignity. The acquirement of land for cultivation has been made easy, and the protection of land titles has been assured by the

introduction of the Torrens system. In the construction of public works there has been exceptional progress. Manila Harbor is now one of the best in the Orient. The city of Manila is now one of the best watered, sewered, and lighted of oriental cities. It is rapidly becoming one of the most beautiful. The hundred miles of railway in the Philippines 10 years ago has been extended to 700, and the extension is still in progress. Over 1,000 miles of permanent macadamized roads have been constructed, and new construction is going on. There is telegraph communication between all important points. Direct cable connection with the United States has brought Manila into the modern commercial and political world. Moreover, progress in public works is being pushed in nearly all the Provinces and in most of the municipalities. These works include not merely roads and improved ways of communication and transportation, but schoolhouses, municipal markets, artesian wells, irrigation plants, and other works upon which depends the moral and mental, no less than the material, advancement of the masses of the Filipino peoples.

In no way has the progress of the Filipino people been better shown than by their increasing participation in their own Government. Under Spanish control the native Filipinos were practically excluded from all share in public affairs. Within 10 years they have been given, and now exercise, the right of electing all of their municipal officers. Native Filipinos also now compose 90 per cent of the officials and employees of the provincial governments, and nearly 60 per cent of the officials and employees of the central government. They have been given their own assembly—the lower house of the Philippine Legislature—which is composed wholly of native members, chosen at popular election. They have representation on the Philippine Commission, which forms the upper house. They divide with Americans the direction of the various executive departments. The chief justice and two of the associate justices of the supreme court, about half of the judges of the higher courts, and all of the justices of the peace are Filipinos. There is no branch of the Government, executive, legislative, or judicial, where Filipinos are not represented in increasing numbers, and where their influence is not important.

All this has made for the betterment of the condition and the hopefulness of the outlook of the individual Filipino. Yet with all the progress of the decade, our work in the Philippines has but just commenced. Along no line, moral, mental, or material, can it be counted as completed. With all the remarkable achievements in sanitation, half of the children born in Manila still die in infancy, and the masses of the people in the Provinces have still but faint conception of the meaning of sanitary principles and are still, by force of habit, opposed to their introduction. With all the remarkable advance in education, there are still over a million Filipino

children of school age unreached. With all that has been done in constructing public works, there are still vast regions of the islands cut off from means of communication and transportation and from facilities for moral and mental betterment. In spite of the higher wages and greater freedom now granted to labor, the old system of peonage, ingrained through centuries, is still accepted as their economic lot by the Philippine masses, and would make them only too ready victims for the rich and educated Philippine minority, who still regard the status of peonage as the natural lot of the ignorant masses. And, finally, the success of the constantly increasing native participation in the native government has been accomplished only because every step has been carefully checked and watched by Americans, and probably nothing is more certain than that, without these checks, such progress would have been impossible. Not only this, but the suspension of these checks now would, with almost equal certainty, forbid the eventual establishment of anything like popular self-government in the islands, and would subject the great mass of people there to the dominance of an oligarchy, and probably an exploiting oligarchy. A complete release from American direction would not merely retard progress along every line noted here, but would inevitably mark the beginning of a period of rapid retrogression. There are few competent students of recent Philippine affairs who do not believe that if American control were now removed from the island practically all signs of American accomplishment in the Philippines during the last decade would disappear in the next generation. Until our work in the archipelago is completed, until the Filipinos are prepared not only to preserve but to continue it, abandonment of the Philippines, under whatever guise, would be an abandonment of our responsibility to the Filipino people and of the moral obligations which we have voluntarily assumed before the world.

It has been said that the United States has never declared a policy governing its control of the Philippines. This is absolutely untrue. The policy of the United States was definitely and maturely declared in the instructions of President McKinley to the Philippine Commission of April 7, 1900, and it has never been departed from since. It is written in every step of the consistent progress of our insular government. President McKinley's statement was expressly and affirmatively confirmed by the Congress of the United States in the organic act for the Philippine Government of July 1, 1902. Briefly, this policy may be expressed as having for its sole object the preparation of the Filipino peoples for popular self-government in their own interest and not in the interest of the United States. In the words of Mr. McKinley:

In all the forms of government and administrative provisions which they are authorized to prescribe the commission should bear in mind that the government which they are establishing is designed not for our satisfaction, or for the expression of our theoretical views, but for the happiness, peace, and prosperity of the people of the Philippine Islands. * * *

The postponement of the question of independence for the islands has been deliberately made, not for promoting our interest, but solely in order to enable that momentous question to be determined intelligently by the Philippine people in the light of their own highest interest. As it was expressed in the message to Congress of January 27, 1908, by President Roosevelt:

They (the Filipinos) have yet a long way to travel before they will be fit for complete self-government, and for deciding, as it will then be their duty to do, whether this self-government will be accompanied by complete independence.

This, then, may be confidently asserted to be the national policy of the United States toward the Philippine Islands. It is definite and clear and needs no explanation. So far it has been scrupulously followed, with high promise of its fullest realization. It should continue to be the national policy so long as there remains a vestige of American control over the islands and, in my judgment, American control over the islands should continue unabated until this policy is carried to completion. Until that time all proposals for independence are pleas for national recreancy on our part and for the repudiation of the heavy and difficult burden which thus far we have been bravely and consistently sustaining. Even more is it unjust to the great masses of Filipino people in whose behalf the high-sounding slogans of "liberty" and "independence" are shouted. After having been for centuries sunk in ignorance and held in economic subjection, they are now being aroused to self-supporting manhood and being welded into national solidarity. Along this line, and this line alone, lies the true course toward liberty and independence.

Review of past year and legislative recommendations.

A general condition of peace and order has prevailed in the Philippine archipelago throughout the year. This was accompanied by satisfactory progress along nearly all economic lines. The total volume of foreign trade for the Philippines for the year reached a total of $104,869,816, an increase over the preceding year of more than $15,000,000. The total exports were $50,319,836, and the total imports $54,549,980. Of the imports only about 40 per cent were from the United States. Nevertheless the purchases from this country were more than 5 times the average annual purchases prior to the establishment of free trade with the islands in 1909.

Severe drought reduced the production of native rice, and required somewhat heavier importations than usual of this staple; while hemp,

which has heretofore held the first place in exports, fell to second place in value. With these exceptions the industrial and commercial progress during the year was notable. Nor are these exceptions without reason. Rice is the principal article of value in the Philippines. For this reason every effort is made by the insular government to promote its local production in quantities sufficient to supply the demands of the native market. This object has, however, not yet been attained, and even had the normal increase of the product been continued during the past year it would not have been yet reached. The chief reason seems to be that under the new industrial development of the islands, the increased demand for labor in all fields and the higher wages prevailing have made rice production less attractive by comparison. In a different degree the same thing is true of hemp. Its price has declined, both on account of the new labor conditions, and also owing to the competition of inferior fibers, which have been found by the trade sufficient in quality for the lower grades of twine and rope for which hemp was once almost exclusively used.

Although the quantity of hemp exported from the Philippines during the last fiscal year was less than during the previous year, this product fell to second place not so much because of this, as because of the remarkable increase in the exportation of copra. This latter product attained first place in value, advancing from less than $10,000,000 in 1911 to $16,514,749 in 1912. The value of the hemp exports for the same year is $16,283,570. Sugar exports reached in value $10,400,575, the highest in any year of Philippine history, but still more than 100,000 tons less than the limit fixed for export to the United States by the present law. There was also a satisfactory increase in the exportation of tobacco over the preceding year, but as with sugar, the legal limit of exports to the United States was far from being reached.

The total ordinary revenues of the insular government for the last fiscal year amounted to $13,925,322.87. To this was added, in accordance with an act of the insular legislature, the surplus of the gold-standard fund, $1,698,513.82. Of the total public revenues the insular government expended during the year on public works, aside from the amounts expended by the provinces and municipalities for the same purpose, $3,338,963.85. The insular government is devoting much of its energy to work of this character, particularly to the building of roads and bridges in the Provinces and to the construction of schoolhouses in the municipalities. The means of communication are no less important to the progress of the Filipinos than means of education. Artesian wells and municipal market places are essential to health and to the development of a higher standard of living. Irrigation projects are necessary to their agricultural and industrial

development. The establishment of land titles, now in process before the court of land registration, is too important to need comment; but before it can be carried to proper completion a cadastral survey of the islands will be required. There are also other varieties of public works necessary to the moral and material advancement of the Philippines, but these are all the works in which the future is even more interested than the present, and it is not only impossible to provide for any important part of them out of current insular revenues but undesirable, since this is a charge that should not be made wholly against the present generation.

Even such of these public improvements which, on their face, seem to concern only the municipalities or provinces have really an indirect but important interest for the insular government through the influence exercised generally over the sanitary and living conditions of the Filipino people as a whole. It has thus been the policy of the government to encourage the municipalities and the provinces in the construction of many public works, and it has in this way been able to encourage the development, for example, of market places, through the loan of the necessary funds to the municipalities concerned; to encourage the construction of roads and the erection of schoolhouses in the provinces and municipalities by sharing in the cost. Such plan has met with success and has stimulated improvements in municipalities and provinces which would not otherwise have been made.

The bonded indebtedness of the Philippine Government for public works is limited by the act of Congress of February 6, 1905, to $5,000,000, a limit reached long since, and the extension of this limit is well warranted by the financial condition of the insular government and is urgently demanded by the work remaining to be done. In my last report I recommended an increase of this limit to $15,000,000, which I believe to be both reasonable and safe, and during the past session of Congress a bill was passed by the Senate authorizing such an increase. This bill is now awaiting the action of the House, and it is much to be desired that it become a law during the present session.

The high character of the work performed by Americans connected with the Philippine Government and the plain necessity for the connection of Americans with this government for long time to come justifies repetition of my previous recommendation for the inauguration of a retirement system to cover certain classes of the higher officials after 10 years of continuous service. The continued success of the Philippine Government demands high qualities in those directly responsible for its conduct, while the sacrifices required of them will make it more and more difficult in the future to secure officials of

the high character desired unless some reasonable guaranty of a livelihood is afforded.

Summarizing the needs of the Philippines requiring congressional action, I recommend:

1. The early passage by the House of Representatives of the bill authorizing an increase of the limit of the bonded indebtedness for public works by the Philippine Government to $15,000,000.

2. That, limiting the operations of the act to those whom it is necessary to continue in the service of the Philippine Government for long periods, provision be made for a just retirement system.

3. That Congress take up and affirmatively settle the question of the disposition of public and friar lands in the Philippines by increasing the limitations now set upon the amount of public lands which can be sold to an individual to an amount which will better permit him to develop and farm it at a profit.

PANAMA CANAL.

The Annual Report of the Isthmian Canal Commission for the fiscal year ending June 30, 1912, which was submitted to you for transmission to Congress as a separate document, shows in detail the progress of the work on the Panama Canal which has gone forward in the same satisfactory manner as in previous years.

The organization of the forces on the Isthmus has remained practically the same as set forth in previous reports, with the exception of certain minor changes. One of these was the establishment of an additional division in the office of the Chief Engineer to take over the actual construction of fortifications. Another was the organization of a designing force to prepare the necessary plans for the dry docks, coaling stations, and permanent machine shops, authorized by the recent Panama Canal act. The principal features of the work during the fiscal year, supplemented by some of the latest figures available, are set forth below:

Excavation.

The total excavation during the fiscal year was 30,302,261 cubic yards, against 32,203,931 cubic yards in the preceding fiscal year. Of the total amount excavated during the fiscal year just ended, 19,343,134 cubic yards were excavated by steam shovels, against 20,281,159 cubic yards in the preceding fiscal year, and 10,959,127 cubic yards were taken out by dredges, as compared with 11,922,772 in the fiscal year 1911. The following table shows how the excavation of all kinds during the past fiscal year compares with that of some of the previous fiscal years:

	Total.	Monthly average.
1908	27,979,375	2,331,615
1909	37,966,926	3,183,910
1910	31,858,122	2,654,843
1911	32,203,931	2,683,661
1912	30,302,261	2,525,188

At the close of the fiscal year ended June 30, 1912, 38,957,185 cubic yards of material remained to be excavated. This includes 16,903,521 cubic yards added to the estimate made in September, 1911, of the total American excavation for the entire canal, which, according to the new estimate, made July 1, 1912, is 212,227,000 cubic yards.

In the central division there have been added 4,615,000 yards to allow for an extension of slides and changes in the Obispo diversion. In the Atlantic division the increase is 295,000 cubic yards, chiefly to provide for silting in the finished channel not covered by the estimate of July 1, 1911. The Pacific division has an increase of 11,993,000 cubic yards, of which 3,199,000 cubic yards are to cover excavation in the canal prism, in the locks and dams, and silting in the finished channel, which has become necessary since the last estimate covering silting. The remainder—8,794,000 cubic yards—is for the newly begun excavation for the dry dock, coaling station, and terminal at Balboa. A statement of excavation required according to the original estimate of December, 1908, and under the revised estimates of July 1, 1910, September 1, 1911, and July 1, 1912, follows:

	1908	1910	1911	1912
Atlantic division	43,077,310	43,357,345	47,227,822	47,522,822
Central division	89,794,493	97,125,018	101,801,296	106,416,296
Pacific division	41,794,791	42,055,403	46,294,261	58,287,261
Total	174,666,594	182,537,766	195,323,379	212,226,379

On October 1, 1912, there remained 31,803,126 cubic yards to be excavated, and the following statement shows what proportion this bears to the total excavation necessary for the canal:

		Cubic yards.
Estimated French excavation usable in present plan		29,908,000
Estimated amount of excavation required May 4, 1904		212,227,000
Total excavation required to complete canal under present plan		242,135,000
Amount taken out by French prior to May 4, 1904	29,908,000	
Amount taken out by Americans to October 1, 1912	180,423,874	
		210,331,874
Amount remaining to be excavated October 1, 1912		31,803,126

This table shows that the excavation is 86.86 per cent completed. In view of the great interest which has been manifested in the subject of slides, the following self-explanatory extract is quoted from Col. Goethals's report as showing the excavation accomplished in the Culebra Cut during the fiscal year just ended, the total amount excavated due to slides since the beginning of construction, and the amount remaining to be excavated on account of slides:

Culebra Cut—Slides.

During the fiscal year 16,476,769 cubic yards of material were removed from the Culebra Cut and, from estimates prepared on July 1, 1912, 11,863,540 cubic yards remained to be removed in order to complete this section of the canal. The amount remaining was again increased over that reported a year ago by 3,595,000 cubic yards, in order to allow for slides already existing at the beginning of the fiscal year and for excavation along the upper levels of the banks of the canal, where slides had developed or were anticipated, and outside of the canal prism lines. The total amount of material removed during the year outside of the slope lines and because of slides aggregated 5,915,000 cubic yards, or 35.90 per cent of the total amount of material removed from the cut as against 30.07 per cent during the previous fiscal year. The total amount of material due to slides so far removed aggregates 16,671,000 cubic yards, and the estimated amount remaining is 3,595,000 cubic yards. The work in the cut has been retarded on account of slides and breaks in its banks which increased as the cut was deepened. The geological formation changes so frequently and suddenly that no treatment for slides has proven effective, when once developed, except that of excavating and hauling away the material composing the moving mass until the slide comes to rest or until the angle of repose for the particular material in motion is reached. At the Cucaracha slide, which has been practically at rest for over a year, the angle of repose is somewhat steeper than 1 on 5, while the Culebra slide on the west bank, where the material is still moving, the present slope is about 1 on 5. In the slide on the west bank of the canal just north of the village of Culebra, the moving material is of stratified rock moving in mass on a layer of lignite which has an inclination of 1 on 7. This slide developed early in the dry season. These very flat slopes of the bank in the deepest portions of the cut explain the large amount of material added by slides and breaks over the original estimates. A number of relatively small slides developed as the cut was deepened, but the largest one now in motion is that which results from a break in the west bank of the canal at Culebra and covers an area of about 63 acres. From this slide 2,710,000 cubic yards were removed during the fiscal year just ended, making a total thus far taken out of 6,765,000 cubic yards, and leaving still to be handled an estimated amount of 1,300,000 cubic yards. The next largest slide lies on the east side of the cut, opposite Culebra, and covers an area of 50.7 acres. From this slide 1,960,000 cubic yards were removed during the past fiscal year, making a total of 4,290,000 cubic yards that have been taken out since it started, in 1907; it is estimated that 600,000 cubic yards still remain.

Work, begun in January, 1911, of decreasing the pressure on the banks where breaks might be expected was continued throughout the year, three steam shovels having been kept continuously at work terracing the west bank in the vicinity of Culebra, and the same number during the greater part of the year on similar work on the opposite bank. By removing the weight from the top of the banks there is less trouble and expense in maintaining the tracks at the bottom of the cut and less interference with drainage, two important considerations in prosecuting the work economically and expeditiously.

* * * * * * *

Thus far increases in the estimates of material to be removed, made necessary by the slides, will cause no increase in the total estimated cost of Culebra Cut, as the division costs were reduced during the past year, effected in part by increased efficiency of the organization, by the fewer interruptions in the transportation service by slides and water, by the better conditions generally of the dumps, and by the upkeep of the output, due to the amount removed by the shovels on the upper reaches. It is also of interest to note that none of the slides which occurred during the year would have interfered with the passage of ships had the canal been in operation.

Col. Goethals also submits a report prepared by Mr. Donald F. MacDonald, geologist, which should tend to allay the apprehension which seems to have been felt concerning the slides which have been given undue importance in some quarters whenever they have occurred. Mr. MacDonald's report contains the following conclusion:

When the slopes shall have been reduced to the proper angle, which will of course vary with the strength of the rock from almost perpendicular in the case of the strong lavas to 1 on 5 in the soft rocks, or, say, even 1 on 10 in a few extreme cases of the much-sheered clay rocks where deformation has further weakened them, the slide problem will be practically solved. With slope pressures thus finally adjusted and a protective mantle of vegetation minimizing erosion on the banks, there is no reason why Culebra Cut shall not be as stable and as enduring as similar valleys formed by nature's sculpturing hand.

On October 1, 1912, the excavation in Culebra Cut was 91.09 per cent completed, 85,382,570 cubic yards, out of a total of 93,731,556, having been taken out, leaving on that date 8,348,986 cubic yards still to be excavated, or 8.91 per cent.

Concrete work.

On October 19, 1912, over 93 per cent of the concrete for all the locks was in place, the amount at the close of work on that day being 4,055,931 cubic yards, out of a total of approximately 4,352,563.

Over 92 per cent of the concrete for the system of three twin locks at Gatun has been laid, the amount in place at the close of work on October 19 being 1,900,330 cubic yards, out of a total of 2,050,000, which total includes an increase of 50,000 yards in the estimates since last year on account of the greater depth of the foundations in the approach walls at these locks.

The concrete work in the spillway of Gatun Dam was over 91 per cent completed on October 12, 206,815 cubic yards, out of a total of 225,000, having been placed.

The concrete work in the lock at Pedro Miguel is over 99 per cent completed, 882,779 cubic yards out of a total of 889,827, bucket measurement, having been placed at the close of work on October 19.

Over 90 per cent of the concrete for the two twin locks at Miraflores was in place on October 19, the total amount on that date being 1,272,822 cubic yards out of a total of approximately 1,412,736.

Gatun Dam.

Up to October 1, 1912, 10,728,965 cubic yards of hydraulic fill and 10,654,534 cubic yards of dry fill, a total of 21,383,499 cubic yards, had been placed in the Gatun Dam. These figures are in excess of the amount in place, determined from cross-section surveys, due principally to consolidation of material. Up to October 1, 1912, the surveys showed a difference of 901,148 cubic yards, and this amount should be deducted to obtain the net amount of material in place, which, therefore, on the date mentioned, amounted to approximately 20,482,451 cubic yards. The semiannual survey in June, 1912, shows that the total yardage of the completed dam will amount to 21,994,111 cubic yards; hence, using this figure as a basis, the dam was over 93 per cent completed on October 1, 1912.

Terminals.

Anticipating the favorable legislation which has since been enacted, general and detailed plans of the terminals were undertaken so that the work of construction might begin as soon as appropriations should become available. In this connection, Col. Goethals reports as follows:

> The general layout of the terminals at the Atlantic and Pacific entrances to the canal is arranged with the object of affording sufficient wharves and piers to meet all requirements when the canal is opened, and at the same time to permit of extension in case future needs so require. In addition to wharf space for vessels, the general plan provides the necessary facilities or docking and repairing all classes of vessels and for furnishing them with fuel, fresh water, and supplies of all kinds. As these facilities may be required for military purposes as well as commercial, all general plans were submitted to the Navy Department for its views, which have been followed in the final designs.

Fortifications.

By the act approved March 4, 1911, Congress appropriated $2,000,000 for the construction of gun and mortar batteries for the defense of the canal. The actual construction work was assigned to the Isthmian Canal Commission to conform to plans furnished by higher authority. Work was commenced on August 7, 1911, and, up to the end of the fiscal year, 408,392 cubic yards of material were excavated, 5,159 cubic yards of concrete were laid, and a channel was excavated to one of the islands by dredging 32,150 cubic yards.

Health conditions and sanitation.

Col. Goethals refers to the impression which is general elsewhere than on the Isthmus that the sanitary work, in the way of clearing land, extends over the entire Canal Zone, and states that it is interesting to note in this connection that of the 278,848 acres comprised within the limits of the zone less than 1,200 are kept clear for sanitary purposes, outside of the military reservations, where the work is done by the troops. What additional clearing may be done around groups of squatters in the brush has not been done under sanitary supervision nor for such

purpose, and is relatively small. In addition, clearing is done for construction purposes, but almost the entire zone is in its original condition as regards brush and jungle.

Reporting on the health conditions on the Isthmus during the fiscal year, the chief sanitary officer states that the total admissions to hospitals and sick camps, including those sick in quarters, was 48,307; that the daily average sick was 22.91 out of every thousand employees, as against 24.77 for 1910–11 and 23.01 for 1909–10, on the basis that the total numbers employed during the years mentioned were 50,008, 49,129, and 50,535, respectively; that the total number of deaths among employees was 508, of which 35 were Americans, 79 were white employees of other nationalities, and 394 were blacks. The total number of deaths from accidents or external causes among all employees was 154, as against 178 for the preceding year. In addition, on the recommendation of the medical examining board, 193 deportations were made, 141 for disease and 52 for injuries.

The death rate for all white employees was 9.21 per thousand, as compared with 10.01 in the year 1910–11, and the death rate for white employees from the United States was 5.90 as against 5.35 for 1910–11. The death rate for black employees was 10.47 as against 11.81 for 1910–11, and the rate for all employees was 10.16, as against 11.34 for 1910–11. The death rate for the entire population of the cities of Panama and Colon and of the Canal Zone, including employees, was 19.82 as against 22.10 for 1910–11.

Force employed.

At the beginning of the fiscal year 941 laborers were recruited in Barbadoes and adjacent small islands in order to meet the demand for unskilled labor which could not be recruited on the Isthmus from the unemployed living in the brush. The supply of and demand for labor about balanced at the end of the fiscal year.

The number of employees of the Canal Commission and the Panama Railroad on the Isthmus fluctuated, there being 32,690 men at work on June 30, 1911, 38,515 on January 10, 1912, and 34,957 on June 30, 1912. The highest recorded force actually at work at any time was in March, 1910, when 38,676 men were employed.

Completion of the canal.

Col. Goethals states that, in accordance with the report of the division engineer of the central division, if no more material due to slides is to be removed than the increase which the estimates of July 1, 1912, contemplate, the excavation through Culebra Cut would be completed by July 1, 1913. Though additional slides have occurred since the close of the fiscal year, there has been no decrease in the force, so that it is still possible to complete the Cut as predicted, though the date must depend upon the slides. The masonry in the entire lock system of the canal should be completed by June 30, 1913. The

date for completing the Gatun Dam is now fixed at July 1, 1913, and August 1, 1913, is the date set for completing the Gatun Spillway.

The contract for the lock gates stipulated that they should be complete by June 1, 1913, but the work has not been carried on as rapidly as was anticipated, and, therefore, the contractor has been called upon to finish the gates in one flight of locks first, so that, if the rest of the work is in condition, the passage of ships can be permitted by the use of one of the flights instead of both. Delays have also occurred in the delivery of lock machinery and accessories, but the work is being organized so as to have completed sufficient machinery to meet the conditions that the lock-gate contract will furnish. It is therefore probable that certain features of the work will not be finished until some time after the first vessel passes the locks in the preliminary trial of the system.

While the official date of opening of the Panama Canal has been set for January 1, 1915, it is the intention to allow vessels to utilize the canal as soon as practicable, and from present indications it is believed this can be accomplished during the latter half of 1913, although it is too far in advance at this time for the canal authorities to fix any definite date. Shipping interests will, however, be advised as soon as any assurance can be given that vessels can be passed through the canal without unnecessary delay.

Panama Railroad Co.

The annual report of the Panama Railroad Co., which will be submitted to you for transmission to Congress at an early date, will show in full the operations of the company for the fiscal year.

After meeting the total cost of operation, together with fixed charges of $39,954.12 and charges for depreciation of rolling stock, floating and plant equipment amounting to $232,489.20, the net income of the company for the fiscal year amounted to $1,762,049.22, as against $1,711,080.39 for the previous year, or an increase of $50,968.83. Of the net revenue, $1,385,568.25 was applied to additions and betterments of plant and equipment.

The indebtedness of the company to the United States Government on account of advances for new equipment and construction and retirement of first mortgage 4½-per cent bonds remains at $3,247,332.11, as it was on June 30, 1911, in accordance with congressional action, no payment having been made on account of principal or interest.

While, as above shown, the system as a whole has earned a satisfactory return upon its capital cost, the steamship line has failed to contribute to that result, but has on the contrary yielded a deficit of $305,742.85.

The relocated railroad from Gatun to tower "R," near Gamboa, was completed and turned over to the company by the Canal Commission on February 15, 1912, and the new Gold Hill Line, from Gamboa to Pedro Miguel, was formally turned over on May 25, 1912. This transaction completed the delivery of the new railroad, entirely on the east side of the canal, to replace that part of the old Panama Railroad destroyed (or to be destroyed) by canal operations.

The company is engaged in the construction of a large reenforced concrete hotel on the beach at Colon at an estimated cost of $440,000, and it is now expected that the hotel will be ready for occupancy about February 1, 1913.

At the end of the fiscal year the company had $2,318,475.51 of available funds on deposit with its designated depositaries, and securities, purchased at a cost of $1,500,000, held in a reserve fund established September 12, 1911, upon which there is now $52,701.08 of accumulated interest to be further invested.

Material progress was made in the company's plans for the construction of a series of terminal docks at Cristobal Point, involving an ultimate outlay of approximately $3,000,000.

Second visit to the canal.

In November of the current year, under direction of the President, I again visited the Canal Zone personally, meeting there some of the members of the Committee on Appropriations, and went over with them and with Col. Goethals, the chairman of the Isthmian Canal Commission, a number of items of future administration. I also took up with the President of the Panama Republic a number of questions remaining unsettled between his Government and that of the Canal Zone.

Canal legislation.

In the act of August 24, 1912, providing for the opening, maintenance, protection, and operation of the canal and the sanitation and government of the Canal Zone, Congress has made admirable provision for executive responsibility in the management of the canal and the government of the zone. Provision is made for the operation of the canal and the government of the zone through a governor appointed by the President, with the consent of the Senate, and through such other subordinates as the President may deem necessary, to be appointed by him, and removable at his pleasure. All previous laws, orders, regulations, and ordinances, adopted and promulgated in the Canal Zone by the President for its government and sanitation, and for the construction of the canal are expressly ratified and confirmed. Authority is given to the President to establish and operate, through the Panama Railroad Co., or otherwise, dry docks, repair shops, yards, docks, wharves, warehouses, storehouses, and other necessary facilities for the purpose of providing coal and other materials, repairs and supplies for passing vessels. Provision is also made, through

the Executive, for the establishment of the necessary wireless telegraphic installations, either directly or by agreement with private wireless companies, in order to insure freedom from interference with the telegraphic installations of the United States Government.

Under the authority of this statute the problem of most efficient organization is receiving careful attention. Preparations are being made to blend the present construction force, so far as necessary, into the force which will eventually operate the canal. The dry docks and other repair and supply facilities, as well as fortifications, are being installed at great economy through use of the present construction force, and preparations are also being made to secure the same economy in establishing the quarters of the mobile garrison.

The act also authorized the promulgation by the President of a system of workmen's compensation. Such a system has been prepared and will be put into effect just as soon as the appropriations for the payment of claims are made at the coming session of Congress. I earnestly recommend that such appropriations be speedily made, in order that we may install upon the zone a system of settling claims for injuries in best accord with modern humane and industrial theory.

Canal tolls.

In my report last year I pointed out that, while in my opinion the United States had an undoubted right to appropriate to American vessels amounts equivalent to the sums paid into its Treasury by these vessels in the form of canal tolls, the assertion of such a right presented a broad question of national expediency, which should not be determined except upon careful study of the conditions and a deliberate conclusion that the national interest would be furthered by securing this advantage to American vessels at the expense of the National Treasury. I caused an investigation to be made into this special question by Prof. Emory R. Johnson, the expert then engaged in the service of the War Department as Commissioner upon Panama Traffic and Tolls. As a result of his investigation he reported to me subsequently that a repayment or a remission of canal tolls was not necessary in order to enable American vessels engaged in coastwise trade to successfully meet such competition as they would be subject to, either from the transcontinental railroads or foreign competitors. The very successful extension of the present trade route via the Panama Railroad Co. simultaneously afforded a demonstration of the truth of Prof. Johnson's conclusions. The freight charges at present over the Isthmus by the Panama Railroad Co. are equivalent to toll charges upon vessels using the Panama Canal of over $4 per net registered ton—a far greater handicap than any tolls which have been suggested as appropriate for the canal. Nevertheless this existing route is not only able to do a very successful business against all of its competitors, but its business is rapidly increasing in volume and strength.

The result of Prof. Johnson's conclusions and of this demonstration were thereupon reported by me to the Committee on Interoceanic Canals of the Senate several months before the Panama Canal act was passed, and I then recommended to said committee that no preference in canal tolls be given to our coastwise vessels.

In view of the fact that nearly a year will still elapse before this provision of the canal act becomes effective, through the completion of the canal, and since it is becoming constantly more apparent that the remission of tolls to our coastwise vessels will in effect amount to a payment of national funds to a special industry which does not need such assistance, I renew my recommendation then made to the Senate committee that such remission of tolls be not granted, and that the act be amended to that effect. Or, if it should be deemed wiser to leave the question open for still further information arising from the actual operation of the canal, authority could be vested in the President, as recommended in my report last year, to grant or withhold such exemption, in whole or in part, according as the needs of such assistance may be shown from the actual operation of the canal.

Promulgation of tolls.

On November 14, 1912, the President, by Executive proclamation, promulgated the following schedules of tolls for shipping through the canal, based upon the report of Prof. Johnson:

1. On merchant vessels, carrying passengers or cargo, $1.20 per net vessel ton—each 100 cubic feet of actual earning capacity.
2. On vessels in ballast, without passengers or cargo, 40 per cent less than the rate of tolls for vessels with passengers or cargo.
3. Upon naval vessels, other than transports, colliers, hospital ships, and supply ships, 50 cents per displacement ton.
4. Upon Army and Navy transports, colliers, hospital ships, and supply ships, $1.20 per net ton, vessels to be measured by the same rules as are employed in determining the net tonnage of merchant vessels.

In accordance with the President's direction, rules for the determination of the tonnage upon which toll charges are based are now in course of preparation, and will be promulgated in due season.

FINANCIAL STATEMENTS.

A comparative statement of the expenditures for the last fiscal year (1912), the estimates and appropriations for the present fiscal year (1913), and the estimates for the next fiscal year (1914) is attached hereto as Appendix F. This statement shows in detail the expenditures from appropriations made by Congress in pursuance of the annual estimates submitted by the War Department. It does not include expenditures from the following classes of appropriations made by Congress without estimates from the War Department:

(1) Indefinite annual appropriations, which are appropriations for such amounts, not definitely stated, as may be necessary to accomplish certain specified objects.

(2) Permanent annual appropriations, which, by the terms of the original act of appropriation, become available each year without additional legislation.

(3) Appropriations for war claims and relief acts, which are made by Congress upon estimates submitted by the Secretary of the Treasury, based upon amounts found due after adjudication of these claims by the Court of Claims, United States courts, and the accounting officers of the Treasury.

Expenditures from appropriations of these three classes are shown in Appendixes G, H, I, and J. These are complete and detailed statements (made in compliance with the requirements of the act of May 1, 1820, section 228, R. S.), covering the financial transactions of the War Department during the fiscal year ended June 30, 1912, from appropriations made for the service of the fiscal years 1912, 1911, 1910, 1909 and prior years, showing all balances from appropriations, the amounts appropriated under each title of appropriation, the amounts drawn from the Treasury, and the unexpended balances of each appropriation remaining in the Treasury on June 30, 1912, subject to requisition. These statements show also the amounts covered into the surplus fund of the Treasury from all appropriations under the control of the War Department which are no longer available or required for expenditure.

ENUMERATION OF REPORTS SUBMITTED.

I submit herewith the report of the Chief of Staff, and the reports made to him by the Chief of Coast Artillery and Chief of the Division of Militia Affairs; the reports of division and department commanders; the reports of the heads of bureaus of the War Department; the reports of the commissioners of the four military parks, of the Superintendent of the Military Academy, and of the Governor of Porto Rico. The laws passed at the last session of the Philippine Legislature are also transmitted.

The report of the Philippine Commission will be transmitted as soon as received.

HENRY L. STIMSON,
Secretary of War.

REPORT OF THE CHIEF OF STAFF.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
Washington, November 15, 1912.

SIR: I have the honor to submit the following annual report, which in all that relates to expenditures covers only the fiscal year terminating June 30, 1912:

GENERAL STAFF.

The following officers have been relieved from duty with the General Staff during the year ending June 30, 1912: Brig. Gen. W. W. Wotherspoon, Col. S. C. Mills, Lieut. Col. G. T. Bartlett, Lieut. Col. Hunter Liggett, Lieut. Col. R. P. Davis, Lieut. Col. D. H. Boughton, Maj. J. F. Morrison, Maj. H. C. Cabell, Maj. E. A. Root, Maj. Johnson Hagood, Capt. F. S. Cocheu, Capt. G. A. Nugent, Capt. C. D. Rhodes, Capt. S. D. Embick, Capt. C. C. Carter.

The following officers have been detailed on the General Staff during this period: Brig. Gen. W. W. Wotherspoon (Aug. 9–Oct. 30), Brig. Gen. A. L. Mills, Col. W. A. Mann, Lieut. Col. R. P. Davis, Lieut. Col. W. G. Haan, Lieut. Col. C. R. Noyes, Lieut. Col. F. S. Foltz, Maj. J. D. Leitch, Maj. C. H. Martin, Maj. J. McI. Carter, Maj. D. W. Ketcham, Capt. H. H. Tebbetts, Capt. W. J. Glasgow, Capt. H. Hall, Capt. W. H. Raymond, Capt. James P. Robinson.

The work performed by the officers of the General Staff has been of the greatest value not only in coordinating the general military policy but in working out the details for the reorganization of the Army and the restationing of troops. Gradually we are evolving a sound military policy, in the building up of which the effects of the teaching at the Service Schools is clearly apparent. I can not emphasize too strongly the great influence for efficiency which the work of these carefully selected officers is exercising.

CHANGES IN OFFICE ORGANIZATION.

There have been no important changes in office organization during the past year. The organization established last year has been very satisfactory, and the Chief of Staff has been relieved of most of the routine work and given much more time for the consideration of more important matters, questions of policy, etc.

ARMY WAR COLLEGE.

It is believed that attention should be called to the mistaken idea which prevails as to the nature of the War College and its work.

From the views expressed in public speeches and in the press it would seem that the War College is looked upon as an institution where a relatively small number of student officers are taught by a large number of instructors made up of General Staff officers and selected assistants. As a matter of fact, the War College course, while a most important element of the work assigned to the War College Division of the General Staff, is only one of the many tasks assigned to that division. In addition to the supervision of the mili-

tary attachés abroad, the military information division at Manila, the War Department Library, the distribution of War Department documents, the operation of the photographic gallery, and the International Exchange for the War Department, the course itself, which has for its object to prepare a limited number of selected officers for the duties of higher command in war and in peace whilst preparing for war, was conducted during the past year by four General Staff officers and four assistants selected from the graduates of the War College. The class itself numbered 33.

This body of instructors also makes up the war plans committee, to which is assigned the duty of collating and discussing all obtainable data relating to the strategical, logistical, and tactical features of possible future military operations, the formation of complete working plans for passing from a state of peace to a state of war, and of submitting recommendations on the numerous subjects connected with the national defense which are referred to it by the Chief of Staff.

The military information committee, the other principal subdivision of the War College Division of the General Staff, is charged with the following duties: The preparation and maintenance of military monographs; the direction and coordination of military education in the Army, the militia, and in civil schools and colleges at which officers of the Army are detailed; the preparation and keeping up to date of a system of military maps, both American and foreign; the preparation from authentic sources of the histories of important military subjects for publication to the Army, either as War Department documents or in the service journals; the furnishing of military information to officers entitled thereto; the arrangement, carding, classification, and filing of publications, periodicals, newspapers, and the carding of reports of the military attachés abroad, as well as the miscellaneous information received in the division. In addition to the current work of this committee, many other tasks are assigned to the members, especially during the sessions of Congress, when the various proposed legislative enactments affecting the Army are referred to the committee for recommendation and report.

In other words, the War College Division is concerned with three of the main elements which go to make up successful preparation for war; viz: the collection in advance of all the information necessary for a correct understanding of each concrete problem of national defense and for its successful solution, the preparation of plans for the possible conflicts in which the Nation may be engaged, and the training of the higher officers for intelligently carrying out these plans.

While the preparation of war plans is a very important part of the work of the General Staff, it does not seem to be generally understood that the work of preparing the Army to carry out efficiently these plans is a still more involved and complex procedure. In other words, the work of the General Staff has to do not only with the preparation of war plans, but involves detailed consideration of all matters pertaining to the Army, its instruction, equipment, and supply, with a view to coordination and securing the best possible results with the means at hand.

Attached hereto as Appendix A is a list of the more important matters handled by the War College Division during the past year.

STRENGTH OF THE ARMY.

The authorized strength of the Army, not including Hospital Corps and Philippine Scouts, on June 30, 1912, was as follows:

Officers	4,812
Enlisted men	81,409

Including Philippine Scouts and Hospital Corps:

Officers	4,992
Enlisted men	90,641

The average strength of the Army during the last fiscal year was as follows:

Not including Hospital Corps and Philippine Scouts:

Officers	4,428
Enlisted men	73,563

Including Hospital Corps and Philippine Scouts:

Officers	4,604
Enlisted men	82,490

The average shortage in the Army during the last fiscal year was as follows:

Not including Hospital Corps or Philippine Scouts:

Officers	384
Enlisted men	6,359

The increase in the strength of the Army over last year was authorized by General Orders, No. 8, War Department, March 30, 1912, and was incident to conditions on the border, and to the reorganization of the garrison in the Philippine Islands.

The large average shortage in enlisted men shows the difficulty experienced in recruiting.

COST OF THE ARMY.

Comparative statement of War Department estimates for the fiscal year ending June 30, 1914, with estimates and appropriations for the fiscal year ending June 30, 1913.

	Estimates for 1914.	Total estimates for 1913.	Appropriations for 1913.	Increase (+) and decrease (−) of 1914 estimates against 1913 total estimates.	Increase (+) and decrease (−) of 1914 estimates against 1913 appropriations.	Increase (+) and decrease (−) of 1913 estimates against 1913 appropriations.
(a) War Department proper (exclusive of rivers and harbors)	$122,218,678.80	$125,803,882.22	$113,791,276.81	−$3,585,203.42	+$8,427,401.99	+$12,012,605.41
(b) Rivers and harbors	58,861,592.00	31,820,038.00	44,715,220.50	+27,041,554.00	+14,146,371.50	− 12,895,182.50
Total	181,080,270.80	157,623,920.22	158,506,497.31	+23,456,350.58	+22,573,773.49	− 882,577.09
(a) Includes permanent annual and indefinite appropriations of	6,051,000.00	6,206,000.00	6,206,000.00	− 155,000.00	− 155,000.00	.....
(b) Includes permanent annual and indefinite appropriations of	2,094,600.00	2,059,600.00	2,059,600.00	+ 35,000.00	+ 35,000.00	.....
Total	8,145,600.00	8,265,600.00	8,265,600.00	− 120,000.00	− 120,000.00	.....
GENERAL OBJECTS.						
Civil establishment (salaries, stationery, etc.)	1,983,998.00	2,068,338.00	2,043,425.58	− 84,340.00	− 59,427.58	+ 24,912.42
Military Establishment:						
(c) Support of the Army	94,247,631.13	94,241,238.98	90,108,712.98	+ 6,392.15	+ 4,138,918.15	+ 4,132,526.00
Military Academy	1,666,735.69	1,935,130.23	1,064,668.26	− 268,394.54	+ 602,067.43	+ 870,461.97
(d) Militia	6,450,000.00	8,756,750.00	6,450,000.00	− 2,306,750.00	.....	+ 2,306,750.00
Public works (military):						
(e) Fortifications	7,090,834.00	7,299,899.00	4,117,235.00	− 209,065.00	+ 2,973,599.00	+ 3,182,664.00
Arsenals	752,572.00	795,900.00	365,950.00	− 43,328.00	+ 386,622.00	+ 429,950.00
Military posts and miscellaneous	2,198,046.98	1,324,230.82	429,424.98	+ 873,816.16	+ 1,768,622.00	+ 894,805.84
Public works (civil):						
Military parks, etc	513,000.00	353,660.00	560,060.00	+ 159,340.00	− 47,060.00	− 206,400.00
Buildings and grounds in and around Washington	409,490.00	413,290.00	327,990.00	− 3,800.00	+ 81,500.00	+ 85,300.00
(f) Rivers and harbors	58,861,592.00	31,820,038.00	44,715,220.50	+27,041,554.00	+14,146,371.50	− 12,895,182.50
Miscellaneous:						
National cemeteries	369,620.00	337,785.00	362,535.00	+ 31,835.00	+ 7,085.00	− 24,750.00
(g) Miscellaneous objects	1,309,260.00	2,863,760.19	2,765,615.01	− 1,554,500.19	− 1,456,355.01	+ 98,145.18
National Home for Disabled Volunteer Soldiers	5,227,491.00	5,413,900.00	5,195,660.00	− 186,409.00	+ 31,831.00	+ 218,240.00
Total	181,080,270.80	157,623,920.22	158,506,497.31	+23,456,350.58	+22,573,773.49	− 882,577.09
(c) Includes permanent annual appropriation for refund of soldiers' deposits	1,300,000.00	1,300,000.00	1,300,000.00	.....	.....	.....
(d) Includes permanent annual appropriations for Militia	4,000,000.00	4,000,000.00	4,000,000.00	.....	.....	.....
(e) Includes permanent annual appropriations for Ordnance Department	81,000.00	81,000.00	81,000.00	.....	.....	.....

(*f*) Includes permanent annual specific and indefinite appropriations for rivers and harbors	2,094,600.00	2,059,600.00	2,059,600.00	+ 35,000.00	+ 35,000.00	
(*g*) Includes miscellaneous permanent annual appropriations	670,000.00	825,000.00	825,000.00	− 155,000.00	− 155,000.00	
Total permanent annual appropriations	8,145,600.00	8,265,600.00	8,265,600.00	− 120,000.00	− 120,000.00	
Plus estimates for 1914 submitted for action of Congress	172,934,670.80	149,358,320.22	150,240,897.31	+23,576,350.58	+22,693,773.49	
Total	181,080,270.80	157,623,920.22	158,506,497.31	+23,456,350.58	+22,573,773.49	

Per capita cost of the Army (including officers and enlisted men, cadets, United States Military Academy, Hospital Corps, and Philippine Scouts), based on the appropriations made by Congress for the support of the Army and Military Academy for the fiscal years 1908 to 1913, inclusive.

General objects.	Appropriated 1908.	Appropriated, 1909.	Appropriated, 1910.	Appropriated, 1911.	Appropriated, 1912.	Appropriated, 1913.
All contingent funds	$32,500.00	$32,500.00	$32,500.00	$62,500.00	$62,500.00	$47,500.00
Army War College	15,000.00	15,000.00	10,000.00	10,000.00	10,000.00	9,000.00
United States service schools	25,000.00	17,000.00	25,000.00	25,000.00	25,000.00	30,000.00
School of Submarine Defense	16,000.00					
Coast Artillery School, Fort Monroe, Va		28,000.00	28,000.00	28,000.00	28,000.00	28,000.00
Signal Service of the Army	210,000.00	285,000.00	280,000.00	250,137.69	375,140.00	375,000.00
Washington-Alaska military cable and telegraph system	190,000.00	202,500.00	100,000.00	75,000.00	125,000.00	50,000.00
Annunciator buzzer systems at target ranges			18,200.00			10,000.00
Wireless telephone apparatus			30,000.00			
Pay, etc., of the Army	32,168,677.23	43,042,060.45	44,531,589.05	44,743,900.28	45,826,242.95	43,559,311.18
Mileage to officers and contract surgeons	600,000.00	600,000.00	625,113.74	625,855.48	600,000.00	500,000.00
Subsistence of the Army	6,833,078.35	7,674,823.53	9,039,695.43	9,100,178.93	9,663,222.01	8,797,080.42
Reimbursement to corps of cadets, Military Academy		1,072.50				
Regular supplies, Quartermaster's Department	7,866,114.88	9,350,430.53	9,306,540.24	8,200,437.96	8,337,380.44	7,557,773.00
Equipment of officers' schools, military posts	10,000.00	12,000.00	12,000.00	10,000.00	9,350.00	6,000.00
Incidental expenses, Quartermaster's Department	2,144,117.92	2,275,107.39	2,250,486.72	2,225,298.85	2,100,021.07	1,886,000.00
Horses for Cavalry, Artillery, Engineers, etc	493,723.37	514,678.00	510,000.00	434,597.90	517,165.50	300,000.00
Barracks and quarters	3,752,482.01	3,756,379.98	3,501,126.67	1,605,730.22	1,856,984.73	1,700,000.00
Barracks and quarters, Philippine Islands	400,000.00	731,022.00	350,000.00	375,000.00	600,000.00	500,000.00
Military post exchanges	397,500.00	400,097.40	215,500.00	70,900.00	40,000.00	40,000.00
Transportation of the Army and its supplies	15,215,703.26	11,986,370.92	12,675,611.92	11,913,585.54	11,133,430.11	10,850,000.00
Transportation of the Army and its supplies, Pacific roads	7,540.99					
Roads, walks, wharves, and drainage		900,000.00	1,100,000.00	900,568.00	449,315.79	925,350.00
Water and sewers at military posts		2,711,275.00	2,859,683.00	2,584,723.00	2,250,903.27	1,702,595.00
Clothing and camp and garrison equipage	3,859,512.10	7,000,422.28	7,011,672.10	6,000,601.53	4,901,290.27	5,000,000.00
Construction and repair of hospitals	475,000.00	545,366.00	455,000.00	586,357.06	450,000.00	450,000.00
Quarters for hospital stewards	40,000.00	75,000.00	75,000.00	15,000.00	10,000.00	10,000.00
Shooting galleries and ranges	125,000.00	191,850.00	177,176.50	184,125.00	125,985.00	93,336.00
Maintenance, Army War College	9,400.00	12,700.00	12,700.00	12,700.00	12,700.00	10,700.00
Rent of buildings, Quartermaster's Department						49,587.00
Claims for damages to and loss of private property						32,616.00
Equipping Army transports with lifeboats and rafts						300,000.00

Per capita cost of the Army (including officers and enlisted men, cadets, United States Military Academy, Hospital Corps, and Philippine Scouts), based on the appropriations made by Congress for the support of the Army and Military Academy for the fiscal years 1908 to 1913, inclusive—Continued.

General objects.	Appropriated, 1908.	Appropriated, 1909.	Appropriated, 1910.	Appropriated, 1911.	Appropriated, 1912.	Appropriated, 1913.
Reimbursement to the District of Columbia for site acquired for a reformatory						$33,000.00
Medical and Hospital Department	$644,587.47	$700,007.50	$700,000.00	$700,000.00	$700,012.00	700,000.00
Army Medical Museum and Library	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
Engineer depots	16,500.00	16,500.00	30,000.00	30,000.00	30,000.00	30,000.00
Engineer School, Washington, D. C	25,000.00	25,000.00	25,000.00	25,000.00	25,282.72	25,000.00
Buildings, Engineer School, Washington, D. C	32,500.00					
Engineer equipment of troops	40,000.00	72,500.00	90,000.00	90,000.00	90,000.00	90,000.00
Civilian assistants to Engineer officers	25,000.00	25,000.00	40,000.00	40,000.00	42,000.00	40,000.00
Ordnance service	300,025.00	300,000.00	325,000.00	325,000.00	337,000.00	300,118.30
Ordnance stores, ammunition	648,000.00	624,000.00	700,000.00	450,000.00	500,000.00	250,000.00
Blank ammunition, maneuver camps				75,000.00		
Ordnance stores and supplies	1,000,000.00	900,000.00	1,000,000.00	800,000.00	800,000.00	700,000.00
Small-arms target practice	1,300,000.00	1,300,000.00	1,336,000.00	1,000,000.00	1,000,000.00	800,000.00
Fire control in field batteries	30,000.00	165,000.00	62,000.00			
Manufacture of arms	1,700,000.00	1,778,158.00	1,700,000.00	1,000,055.50	750,008.56	700,000.00
Automatic rifles			200,000.00	150,000.00	200,000.00	150,000.00
National trophy and medals for rifle contests	5,000.00	5,000.00	9,000.00	10,000.00	10,000.00	10,000.00
Pay of Military Academy	576,306.54	618,616.87	626,873.33	611,520.20	669,299.07	728,177.80
Current and ordinary expenses, Military Academy	117,600.91	117,808.19	127,033.00	142,598.00	138,333.00	139,807.00
Miscellaneous items and incidental expenses, Military Academy	54,935.00	52,930.00	52,080.00	51,880.00	56,812.50	55,080.00
Buildings and grounds, Military Academy	43,525.00	56,720.00	28,535.00	56,252.00	38,979.50	46,486.46
	81,460,330.03	99,132,896.54	102,293,116.70	95,612,503.14	94,912,358.49	89,632,518.16
Less appropriations for following objects:						
Pay of retired officers	2,692,000.00	2,941,934.47	3,178,900.63	3,222,025.00	3,362,850.00	3,265,000.00
Pay of retired enlisted men	900,000.00	1,193,445.00	2,000,000.00	2,100,000.00	2,147,670.00	2,150,000.00
Interest on soldiers' deposits	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	130,000.00
Subsistence, etc., to National Guard officers attending service and garrison school	10,000.00	10,000.00	17,000.00	20,000.00	20,000.00	21,500.00
Annuity to Jennie Carroll and Mabel H. Lazear			3,000.00	3,000.00	3,000.00	3,000.00
Annuity to John R. Kissinger				453.33	1,200.00	1,200.00
	3,702,000.00	4,245,379.47	5,298,900.63	5,445,478.33	5,634,720.00	5,570,700.00
	77,758,330.03	94,887,517.07	96,994,216.07	90,167,024.81	89,277,638.49	84,011,818.16

The average strength of the Army (officers and enlisted men) for the fiscal year 1908, including the Hospital Corps (3,531), cadets United States Military Academy (439), Porto Rico Provisional Regiment (593), and the Philippine Scouts (4,839), amounted to 68,513 men. Based upon the amount appropriated for the fiscal year 1908 ($77,758,330.03), the cost of maintenance per man would be $1,134.94 for the year.

The average strength of the Army (officers and enlisted men) for the fiscal year 1909, including the Hospital Corps (3,461), cadets United States Military Academy (439), and the Philippine Scouts (5,611), amounted to 84,571 men, making the cost of maintenance $1,121.98 per man for the year based upon the appropriation of $94,887,517.07 for the fiscal year 1909.

The average strength of the Army (officers and enlisted men) for the fiscal year 1910, including the Hospital Corps (3,408), cadets United States Military Academy (435), and the Philippine Scouts (5,681), amounted to 84,933 men. The appropriations for this year aggregated the sum of $96,994,216.07, making the cost of maintenance $1,142 per man for the year.

The average strength of the Army (officers and enlisted men) for the fiscal year 1911, including the Hospital Corps (3,453), cadets United States Military Academy (415), and the Philippine Scouts (5,379), amounted to 81,777 men. The sum of $90,167,024.81 was appropriated for the service of this fiscal year, making the cost of maintenance $1,102.59 per man for the year.

The average strength of the Army (officers and enlisted men) for the fiscal year 1912, including the Hospital Corps (3,474), cadets United States Military Academy (535), and the Philippine Scouts (5,632), amounted to 87,629 men. The appropriations for this year aggregated $89,277,638.49, making the cost of maintenance $1,018.81 per man for the year.

Based upon the actual strength of the Army (officers and enlisted men), as reported to date of June 30, 1912, including 3,496 enlisted men of the Hospital Corps, 533 cadets United States Military Academy (number estimated), and 5,660 Philippine Scouts, amounting to 91,994 men, and an appropriation of $84,011,818.16, the estimated cost of maintenance would be $913.23 per man for the year.

The foregoing figures represent the approximate cost of enlistment, equipment, support and maintenance of the personnel of the Army of every character, including muster, pay, subsistence, transportation by land and water, the purchase and repair of ships, boats, and other vessels required for the transportation of troops and supplies, and for official, military, and garrison purposes, for expenses of sailing public transports and other vessels, clothing and quartermaster supplies, ordnance stores and ordnance equipment, the manufacture of small arms and ammunition, rifle practice, medical and hospital supplies and treatment, signal service and aeronautics, every contingent expenditure connected with the military establishment, the maintenance of the War College, Army Medical School and Library, service and garrison schools, pay of cadets and current and miscellaneous expenses of the Military Academy, and the upkeep of the grounds and buildings of the military establishment and Military Academy.

Permanent land improvements incident to the establishment of military posts, forts, arsenals, sites for fortifications, emplacements for heavy ordnance, armament of fortifications, gun and mortar batteries, fortifications in insular possessions, barracks and quarters, seacost defenses (in the United States and the Philippine Islands), and all other public improvements of a permanent nature under the War Department, appropriations for which are made under the general head of "Public works," are, as a matter of course, not included in the foregoing statement, as they may be considered as not directly pertaining to the cost of the personnel of the Army.

In this connection it might be well to add that of the total appropriations made for the five years (1908 to 1912, inclusive), it is estimated that the sum of $12,937,576.09 was used in the purchase of medical supplies and clothing and the purchase and manufacture of small arms and ammunition for reserve supply. Deducting this amount from the total appropriated ($449,084,726.47) would make the average annual cost for enlistment, equipment, support, and maintenance of the personnel of the Army $1,071.79 per officer and enlisted man, based upon the average strength of the Army for the years named, including the Hospital Corps, Philippine Scouts, and the cadets at the United States Military Academy.

ARMY LEGISLATION.

The legislation carried by the Army appropriation bill for the present fiscal year has given the Army the Service Corps, for which it has been asking for years, and which will tend greatly to improve the efficiency of the service. It has also provided for a consolidation of the Quartermaster's, Subsistence, and Pay Departments into a common department of supply, known as the Quartermaster Corps. This will also tend to efficiency and economy. The necessity for and value of a reserve has been recognized and legislation enacted which will make the commencement of a reserve possible. It is believed, however, that this legislation should be modified so as to permit a transfer of men to the reserve at the end of two years if their instruction warrants it, and a small monthly pay should be provided for reservists.

The views of the department on legislation then pending were fully set forth in last year's report. The department was strongly opposed to any lengthening of the enlistment period. Its attitude in this matter was approved by the President and had the support of a great majority of the officers of the General Staff and various service schools. It was fully committed to the policy of establishing a reserve. It approved the establishment of a service corps and the consolidation of the Quartermaster's, Subsistence, and Pay Departments, but was opposed to having this consolidation accompanied by a reduction in the total number of officers of the consolidated corps, for the reason that a considerable number of line officers were required to be attached to the Quartermaster Corps in additon to those regularly detailed in it in order to perform properly and promptly the duties pertaining to the corps, and for the further reason that the Quartermaster General had in previous years stated that large economies could be made if the number of officers in his department was increased. This demand for an increase was partially met by the addition of 30

officers to the department last year. The reduction in the number of officers threw back some 40 officers on the line to be absorbed, thereby delaying the already slow line promotion. The department was also opposed to any reduction in the General Staff and to the consolidation of the General Staff with the Adjutant General's and Inspector General's Departments in the manner proposed in legislation then pending.

The consolidation of the Adjutant General's and Inspector General's Departments with the General Staff was not made, but the reduction in the General Staff was. This I believe to be a step in the wrong direction. The General Staff was barely sufficient in numbers to perform the duties properly belonging to it, and its reduction, especially in the number of captains, will seriously interfere with its work.

I am of the opinion that it would be for the best interests of the service to transfer all the personnel of the staff corps—excepting engineers, medical officers, and chaplains—to the line, increasing the number of general officers and line officers in the different grades accordingly; this alone, in my opinion, will terminate the constant struggle between line and staff, a struggle which is as old as the Army and one which promises to continue. A number of officers equal to those transferred would have to be immediately detailed to perform the various staff duties, but they would all belong to one common body, and the efforts of the permanent Staff Corps to continue their individuality would disappear. The law which permits the redetail of officers above the grade of major would secure sufficient permanency in the heads of the various corps to insure efficiency. There would be no interference with promotion, nor would the members of the present Staff Corps lose any of their present advantages; in fact, a wider field would be open to them. The Staff Corps would be composed of men much more closely in touch with the sentiments and needs of the line. There would be more cooperation and greater efficiency.

This transfer would, perhaps, interfere with some individual preferences, but I believe it would be to the great benefit of the service as a whole. The Army is gradually approaching this condition, but it is approaching it under conditions which must tend to inefficiency rather than efficiency. As no more permanent appointments are now made in the Staff Corps and as the law provides that the heads of these corps must be selected from the permanent officers as long as any such remain, a condition will soon arise under which selection of the heads of the Staff Corps will be limited to a very small number of officers and eventually to one or two, one of whom must be selected regardless of his fitness, whereas if the transfer suggested were made the field of selection would be the entire body of line officers of suitable rank.

DETACHED SERVICE.

The number of officers on detached service June 30, 1911, was 757; the number on detached service June 30, 1912, was 760. This is an excellent showing when it is remembered that a very considerable number of additional officers have been detailed for duty with the militia. Every effort has been made to employ retired officers whenever it has been practicable to do so. Especial effort has been made to return captains to duty with their organizations, and a

considerable number of captains have been relieved from duty at colleges. It has been necessary, however, to detail a number of captains for duty with the militia.

A large amount of detached service is inevitable under the detail system and under the present policy of detailing officers for duty as inspector instructors with the Organized Militia and instructors at colleges and schools. The disadvantages are far more than compensated for by the benefits to the service from the detail system in the Staff Corps, which has resulted in greater efficiency, in the great improvement in the militia, and in military instruction in the schools.

The great importance to the service of officers having at least two years' duty in actual command of an organization appropriate to their rank out of each period of six is fully recognized, and with a view to securing this and, at the same time, having a regulation with sufficient elasticity to be workable without prejudice to the best interests of the service, the following modification of paragraph 40, Army Regulations, was put in force:

In time of peace no officer below the grade of lieutenant colonel shall be detached nor permitted to remain detached from that branch of the Army in which he holds a commission, or from the organization, if any, to which he shall have been assigned in said branch by competent authority, for more than four years in any period of six years. Temporary duty in connection with rifle or pistol competitions, with courts-martial or military boards, or as umpire at maneuvers, not aggregating more than two months in any one year, performed while not regularly on detached service, leaves of absence on full pay taken while not regularly on detached service, and duty as a student officer at a service school, shall not be deemed detached service within the meaning of this paragraph, but upon completion of a tour of duty as student at a service school officers will be returned to their respective regiments, organizations, corps, or departments, and will not be detached therefrom for two years thereafter unless such detachment be authorized or directed by the Secretary of War. This paragraph shall not be construed so as to impose restrictions beyond those imposed by statute upon the detail or redetail of officers to the staff corps or departments or the General Staff Corps. (C. A. R., No. 8, July 10, 1912.)

It is believed that this would have accomplished what was desired not only by the War Department but by Congress, namely, a definite period of duty with troops, especially by those officers who, through no fault of their own, but because of their known efficiency, special qualifications and training, have been frequently selected for detached service, resulting in their separation from active duty with troops of the arm in which commissioned for unduly long periods. Legislation rigid in character was, however, enacted during the last days of Congress, which will require the return of all officers of the line below the grade of major who have not been for at least two years in the past six actually present for duty with a troop, battery, or company of the arm in which commissioned to duty with such organizations.

The legislation referred to follows:

Provided, That hereafter in time of peace whenever any officer holding a permanent commission in the line of the Army with rank below that of major shall not have been actually present for duty for at least two of the last preceding six years with a troop, battery, or company of that branch of the Army in which he shall hold said commission, such officer shall not be detached nor permitted to remain detached from such troop, battery, or company for duty of any kind; and all pay and allowances shall be forfeited by any superior for any period during which, by his order, or his permission, or by reason of his failure or neglect to issue or cause to be issued the proper order or instructions at the proper time, any officer shall be detached or permitted to remain detached in violation of any of the terms of this proviso; but nothing in this proviso shall be held to apply in the case of any officer for such period as shall

be actually necessary for him, after having been relieved from detached service, to join the troop, battery, or company to which he shall belong in that branch in which he shall hold a permanent commission, nor shall anything in this proviso be held to apply to the detachment or detail of officers for duty in the Judge Advocate General's Department or in the Ordnance Department, or in connection with the construction of the Panama Canal until after such canal shall have been formally opened, or in the Philippine Constabulary until the first day of January, nineteen hundred and fourteen, or to any officer detailed, or who may be hereafter detailed, for aviation duty. And hereafter no officer holding a permanent commission in the Army with rank below that of major shall be detailed as assistant to the Chief of the Bureau of Insular Affairs with rank of colonel, or as commanding officer of the Porto Rico Regiment of Infantry, or as chief or assistant chief (director or assistant director) of the Philippine Constabulary, and no other officers of the Army shall hereafter be detailed for duty with the said constabulary except as specifically provided by law.

The language of the law is clear and explicit, and will require the return to the organizations of the arm in which commissioned of a very large proportion of the officers of the line below the grade of major now on detached service at the service schools, Military Academy, with the militia recruiting service, attachés abroad, General Staff, etc., and, while it can be carried out, and will in the end be beneficial to the service in many ways, it will result temporarily in serious interference with the work in the schools and special services above referred to. It is believed that the provisions of this legislation should be somewhat modified in order to allow for the detachment of officers for certain classes of temporary duty of a purely military character, such as are specified in the modification of paragraph 40, above quoted, and that the application of the law to those officers who have been on duty as regimental, battalion, squadron, and district staff officers, commanders of machine-gun and separate detachments, should not be retroactive, as such service has always been considered in the Army to be service with troops.

It is believed that the following amendment of the law would, without interfering with its purpose, permit it to be applied without hardship or injustice to officers who have had long service with troops both at home and abroad in the capacity of regimental, battalion, squadron, and district staff officers, commanding officers of machine-gun and separate detachments, etc., and to officers who are at present serving as students at the various military schools in the United States:

That in determining eligibility for detached service under the terms of this proviso temporary detached duty of a military nature and sickness, not exceeding two months of such detached service and sickness in any calendar year; service as student officers at the service schools at Forts Leavenworth and Riley, Kansas, Fort Sill, Oklahoma, and Fortress Monroe, Virginia; and service rendered prior to December fifteenth, nineteen hundred and twelve, as a staff officer of a tactical command not higher than a regiment or its equivalent, shall be disregarded.

Three hundred and eighty-five officers who are on detached duty away from their commands and 200 who are on duty as regimental, battalion, district, and post staff, a total of 585, are to be relieved, and approximately the same number detailed in their places. The status of approximately 1,170 officers will therefore be changed, and of this number a change of station will be required of approximately 770. It is impracticable at this time to estimate the expense involved. The relief of a large majority of the officers (nearly three-fourths) is necessitated by reason of the fact that during recent years, though serving with the troops of their regiments in camp and post, they have not been actually on duty with any one company. The duties performed were in daily actual contact with enlisted men, such as

commanding a machine-gun platoon, battalion quartermaster or adjutant, and corresponding regimental duties.

The officers being relieved may be classified as follows:

General Staff	8
Quartermaster's Corps	67
Signal Corps	16
Coast Artillery School	13
Army service schools	32
Mounted Service School	14
Military Academy	55
Military attachés and foreign military schools	12
School of Musketry	9
Militia duty	28
College duty	22
Recruiting duty	21
Aids-de-camp	17
Miscellaneous	71
Present regimental, battalion, post, and artillery district staff	200
	585

The exemption of aviators from the provision requiring two years' service with troops in each period of six will not be to the advantage of these officers or to the service, nor will it be in accordance with the general policy of the department relative to instruction in aviation. It is not desired to keep officers for too long periods on this duty, but it is desired to instruct as many officers as practicable and return them to their regiments, permitting their return from time to time to aviation work for such periods as will keep them proficient and familiar with the changes in machines.

The prohibition of the further detail of captains to the Philippine Constabulary as director or assistant director will require that future details to this service be made from field officers. The service is exacting and requires a high degree of physical activity. The Philippine Constabulary is a most efficient force, to which a very large proportion of the credit for the satisfactory conditions as to public order in the islands is due. The organization and development of this force is due to the splendid work of carefully selected officers, endowed with the mental and physical activity essential to the efficient performance of this work. The average age of captains serving with the rank of colonel in the Philippine Constabulary is approximately 47 years. I doubt the advisability of limiting the detail of officers for this duty to officers of grades which will generally result in the assignment of older men.

Attached hereto as Appendix B is the opinion of the Judge Advocate General of the Army as to the application of the law regarding detached service.

RESERVES.

Last year I made the following general statement relative to reserves:

MEN.

In view of the small size of the Regular Army and the small number of instructed militia, it is imperatively necessary that steps should be taken to organize a reserve composed of men who have served in the Regular Army, militia, or Marine Corps, from which the regular and, if possible, the militia organizations can be promptly filled with instructed men to war strength, and from which the losses of organizations can be made up during the first stages of a protracted war. Men in the reserve should receive a small monthly pay, keep the War Department informed as to their address, and should be regularly assigned from time to time to the organizations to which they would report in case of war. They should only be liable to service in case of war,

and should only be called to the colors when war is imminent, and for such maneuver or instruction periods, not to exceed 10 days in each year, as may be considered necessary. Men in the reserve should have entire liberty of occupation and residence. While on duty at the maneuvers they should receive the full pay of their grade. We can not be considered as even reasonably prepared for war until we have provided a reserve sufficient to fill up to full war strength the Regular Army and the militia when called into the United States service and in addition provide for at least 50 per cent loss in these organizations during the first year. With such a reserve we shall be prepared to conduct a war during its first periods and have a reasonably well-prepared force for field operations while we are engaged in raising and training the great body of volunteers, on which we must eventually depend in case of a long war. At present, in case of war, we would be entirely dependent upon the voluntary return to the colors of men who have had service in the Regular Army or in the militia. These men would undoubtedly return in large numbers, but the question of a reserve should be placed beyond all doubt by its thorough organization in time of peace in order that every organization may without delay be filled up with instructed men.

The first steps taken should be those necessary to authorize a reserve and the enlistment therein of available men of suitable age, sound physique, who have had honorable service in the Army, Marine Corps, or militia, and the modification of the present enlistment so as to provide three years with the colors and at least three in the reserve under the general conditions outlined. This is not only sound military policy but sound economy, as it insures a reasonable preparedness for war, interferes to the least extent with the civil and industrial pursuits of the individual; in fact, sends him back to civil life a more valuable industrial factor because of his better physique, his improved mental and physical discipline, and with a greater respect for the flag, law and order, and his superiors. It is in accord with our institutions and ideals, in that it gives us the trained citizen soldier with the minimum of time taken from his industrial career. It keeps our officers alert and progressive and it gives us back of the first line, consisting of the Regular Army and the militia, a body of trained soldiers ready for immediate service, 10 of whom can be maintained for the cost of 1 man with the colors. In brief, short service and few reenlistments, except noncommissioned officers and a few skilled privates, with its concentrated progressive instruction and resulting passing through the Army and return to civil and industrial pursuits of as many men as possible, means preparedness for war at a minimum of expense and by means in accordance with our ideas. This principle has been carried out with the greatest success in Switzerland, where the available men of the country have undergone thorough military training with a minimum degree of interruption of their civil pursuits; here we have a population which is trained for war under conditions which afford a striking example of what can be accomplished by short service with the colors, thorough but concentrated instruction, and the return of the instructed man to his regular occupation, ready to respond whenever called upon. Long service with the colors, with the encouragement of reenlistment, means an army a large portion of which is serving for retirement and has passed the age of greatest physical activity and resistance. Its value as a field force has fallen off. At the same time, due to long service, the per capita cost is much greater than that of a short-term army, on account of the increase in the rate of pay. Most of the men who leave such a force do so because of disability or by retirement for age. There is little or no material for a reserve. Such an army represents the maximum cost and a relatively low degree of efficiency, and the effect upon both officers and men is deadening, progress stops, and inertia results. This has been the history of long-service armies in all countries.

Our present condition, so far as the land force is concerned, is one of unpreparedness for war with any first-class power. This unpreparedness is principally in the mobile army, and is due to lack of any adequate provisions to bring the present organization up to full war strength, either regular or militia, and to our failure to assemble an adequate reserve of men or war material, especially in Field Artillery guns and ammunition.

The matter has received much attention by Congress during the recent session and legislation has been enacted providing for the establishment of a reserve. This legislation marks a very great advance in our military policy—the greatest which has been made in years. Experience will indicate the necessity for certain modifications of the provisions of law recently enacted, but the all-important thing has been done—the necessity for a reserve has been recognized and the foundation laid. It is hoped that the States will now take steps to provide a reserve for the Organized Militia.

While the value and importance of the recognition by Congress of the necessity for a reserve in the form of legislation recently enacted is fully appreciated, it is feared that the terms of the legislation will operate in the end against a sufficient reserve being built up, and instead of inducing men to enlist in the reserve will tend to keep them from so doing, as service in the reserve does not carry any yearly pay or compensation unless the reservist be called to the colors, whereupon he receives a sum corresponding to the length of time he may have been a member of the reserve. In other words, a man may serve for many years in the reserve and receive no pay unless he is called to the colors during such service. He is, furthermore, on the status of a furloughed soldier and is subject to military law and regulations. In other words, he assumes an obligation. On the other hand, the man who does not join the reserve, but comes in in case of war, receives a bounty varying in amount according to the time he has been out of the service. This man has not assumed any obligation during this period and has not been on the furloughed status. In other words, the tendency will be for a man to decide to hold off and come to the colors and receive the bounty offered, rather than to assume the responsibilities of a soldier on the furloughed status, with no certainty of pay unless he is called to the colors. I believe that anything which looks like the establishment of a bounty system should be avoided. It has been one of the most pernicious influences in our military history, and all our wars have shown its undesirability. A fixed monthly pay should be provided for the reservist, the men assigned and the details of organization worked out in advance in order that an orderly and rapid mobilization may be possible.

When it is remembered that our Army is limited to 100,000 men; that our militia can not furnish over 75,000 to 80,000 instructed men, and that our minimum requirements in case of a war with a first-class power will be in the neighborhood of 500,000 men, it is incredible that any argument should be needed to show the necessity for a reserve to bring the Army and Organized Militia at least up to war strength. The reserve idea has been adopted throughout the world by all great military nations as representing the maximum of military efficiency with the minimum of interference with the economic life of the country.

In order that a reasonably strong reserve may be established with the least practicable delay, all men who have served in the Regular Army, Marine Corps, or militia, and are of the proper age and physically fit, should be authorized to enlist at once in the reserve, and the reservist should be paid. A law providing a salary of $4 per month to the reservist, under the following conditions, would, I believe, greatly tend to build up the reserve:

The reservist to receive $2 per month while in the reserve and on being called to the colors for service in war to receive an amount equivalent to $2 for each month they may have served in the reserve. This would give the reservist, when called to the colors, something to leave with his family and would encourage men to go into the reserve and to remain in it.

The necessity for initiating steps for the provision of a reserve of officers qualified to serve as company officers of reserves or volunteers is also of great importance, and one which should receive the serious attention of the department. I am of the opinion that it would be practicable to select from the graduating classes of those military

schools where we have officers of the Army as military instructors 500 men each year, who could be commissioned as second lieutenants in the different line branches of the Regular Army for a period of one year, to receive the full pay and allowances of a second lieutenant, to be junior to all second lieutenants of the regular establishment, and to be discharged at the end of one year with a certificate of proficiency, if they merit it, as company, troop, or battery officers of volunteers or reserves. I believe that a proposition of this kind on the part of the Government would meet with a generous response and that it is a practicable way of providing a reserve of officers. The results obtained would justify the expense. It is not unlike the methods pursued in foreign countries to provide a corps of reserve officers. One thing is certain: We shall require many thousands of officers, in addition to those of the regular establishment, as officers of volunteers and reserves in case of war, and steps should be taken to provide them in time of peace.[1]

The Hon. J. Q. Tilson, M. C., has presented a well thought out plan in a bill introduced by him, which is attached hereto as Appendix C.

Attached hereto as Appendices C–1 and C–2 are charts which show graphically the size of the regular army of various countries including the United States, at peace strength, war strength and also the size of the reserves.

RESERVE MATÉRIEL.

Attention is invited to the statement in last year's report concerning the great shortage of reserve matériel.

A large measure of dependence upon citizen soldiery brought into the service of the United States after war is declared has always been a recognized policy of the United States. Such soldiery will be of no value if we are not prepared to give them arms and ammunition when they are organized. We have accumulated a considerable supply of small arms and small-arms ammunition, but we are sadly deficient in the reserve supply of field artillery and field artillery ammunition, and of reserve seacoast ammunition. At the present rate of appropriations it is estimated to take over 50 years to secure a reasonable supply of ammunition for the coast defenses and a reasonable supply of Field Artillery guns, carriages, and ammunition. * * *

The existing want of Field Artillery guns, carriages, and ammunition constitutes a grave menace to the public safety in case of war. Ordinary prudence would seem to dictate that the appropriations, especially those for Field Artillery guns, carriages, and ammunition should be very greatly increased. Once a state of war exists with a first-class power there will be no opportunity to buy the matériel abroad or time to manufacture it at home, even if all available plants in this country were running at the maximum capacity, without such delay as would be fatal to our hopes of success. This shortage of Field Artillery matériel is the most serious feature of the present military situation and one which should be immediately corrected. It constitutes a source of grave danger.

I can not too strongly urge the necessity for more liberal appropriations for the manufacture of reserve matériel of the following type: First, Field Artillery guns and ammunition; second, Coast Artillery ammunition. The condition as to shortage, especially of Field Artillery guns and ammunition, is one which constitutes a grave danger to this country and one which would seriously prejudice our chances for success in case of a war with a first-class power. We shall be found unprepared in this most important arm, both in guns and ammunition, unless the present deficiency is provided. Appendix D gives a graphic illustration as to the status of this arm.

[1] The Hon. J. Q. Tilson, M. C., has presented a well thought out plan for a reserve in a bill introduced by him, which is attached hereto as Appendix C.

VOLUNTEERS.

Three years ago the President sent a special message to Congress urging the enactment of a law for raising a volunteer army in time of war. A bill was introduced to carry this recommendation into effect, but as a result of certain objections developed in the course of a hearing before the Military Affairs Committees of the House and Senate, subsequent bills were substituted for the first one. Finally a substitute bill was reported from the Senate Committee on Military Affairs. This bill is without doubt better in many respects than the original bill, and its favorable consideration by Congress is urgently recommended. Its enactment will cost nothing in time of peace, and will save the Government millions of dollars in time of war.

COUNCIL OF NATIONAL DEFENSE.

It is earnestly hoped that Congress will provide a council of national defense. The proposition has the approval of the President, the Secretary of War, and the Secretary of the Navy. The existence of this council would do much toward making practicable the formulation and execution of a consistent and continuing policy of national defense, would be of great assistance in coordinating the plans of the Army and the Navy, and would furnish a means of reconciling the military and financial interests before submitting to the President and to Congress measures for national defense. I consider it to be a measure of the very greatest importance and one which would have great weight and influence in securing a sound military policy.

ELIMINATION OF UNFIT OFFICERS.

Some means must be provided for the elimination of unfit officers, if the highest degree of efficiency is to be attained.

The full efficiency of an organization of men can not be secured without a system by which the merits of the individuals shall have some effect upon their advancement. The absence of such a system not only causes the loss of the service of selected persons in the higher and more responsible places, but it means failure to utilize the healthful stimulus to effort which is inspired by the hope of honorable preferment. The Army has long suffered from this lack. Up to the grade of colonel promotion therein is entirely by seniority in each branch, and there is no way under the law by which an officer, no matter what his merit, can be advanced a single number, except by making him a general officer. Even temporary service in higher grades can be had in three cases only, viz, by detail in the Ordnance Department, and by detail of first lieutenants to serve as captains in the General Staff and in the Judge Advocate General's Department.

Selection in promotion has been the subject of but little consideration; an insuperable difficulty has been thought to be the impossibility of excluding from the selection influences other than those for the good of the service, especially political influence. But it is believed that the great measure of success which has attended the legislation for placing the civil service of the Government upon a basis of merit is an indication that a similar result can be achieved with the military service, in which, since promotions are now made in accord-

ance with rigid law, there is no entrenched system of patronage to be dislodged. Conservative opposition is most to be looked for in the Army, where there is jealous fear of the effects of favoritism, but this would disappear under the influence of a proposition of law to place the selections where they belong, in the hands of the service itself, which surely is worthy of the trust, by lodging it with boards of officers so chosen as not to be personally affected by their decisions and sworn to act in accordance with the best interests of the service.

The main arguments for promotion by selection are familiar to all who have given to the subject even casual thought. They rest upon the stimulus which the hope of reward gives to increased effort, thereby improving the whole body; and the right which the Government should enjoy, in common with all great organizations, to have its important and responsible positions filled by the most competent persons in its service. The principle has never met with favor in our service by reason of the profound distrust which pervades it of the methods by which such selections as have been permitted under former laws were almost invariably made. Officers prefer to submit to the state of affairs under which the one whose conduct and capacity are just sufficient to retain him in the service advances equally with the most meritorious, rather than to risk being passed over by those whose interest with persons of political power or whose social connections are such as to enable them to set in motion the forces which have been seen to prevail in former competitions for all staff appointments, except the few which were the reward of success in examinations. Any scheme for the introduction of selection in the government of promotion would, in the effort to obtain the support of the service, be foredoomed to failure which did not meet this long-standing and well-founded objection.

Any plan adopted should have a feature for effecting the elimination of those who, after ample opportunity for demonstrating their character, have been found least efficient, under a system which shall not impose too great hardships upon individuals, and shall not involve a considerable charge for their maintenance upon a retired list.

I believe that the essential principles of selection and elimination would be properly secured by a bill embodying the following features:

First. A proportion of all promotions should be by selection from the grade below.

Second. The selections should be made by boards of officers of the branch of the service in which the vacancy to be filled exists, all members of which should be senior to the eligible grade.

Third. All officers should be promoted to the various grades below that of brigadier general after certain total periods of service as officers, to be fixed for each grade.

Fourth. Surplus of officers in any grade over the statutory number authorized, produced by the process just mentioned, should be relieved by the selection of officers therefrom for retirement.

Fifth. Selections for retirement should be made by boards of officers of the same branch of the service, all senior to the grades to be passed upon.

Sixth. The pay of officers retired in this manner should be a percentage of their active pay depending upon their length of service.

A reasonable length of service for promotion to the various grades would be somewhat as follows:

	Years.
To first lieutenant	5
To captain	11
To major	21
To lieutenant colonel	27
To colonel	31

The percentage for retired pay could be so fixed as to involve no increase of cost of the active and retired lists of the Army over the present expense.

Without some artificial system of elimination of officers natural casualties bring officers to the upper grades at average ages beyond those at which they are best fitted to take up the duties of those grades, and keep them in close touch with the details of junior positions long after such details have ceased to interest them or can afford proper occupation for their expanding faculties. An examination of the Army list shows that in the Cavalry service the age of the junior colonel at present is 58 years; that of the junior lieutenant colonel, 55 years; and that of the junior major, 47 years.

Undesirably high as these ages are, they are very much lower than they would have been had the Cavalry not been increased by 50 per cent by the act of February 2, 1901. Without this increase these ages would have been as follows: That of the junior colonel, 61 years; that of the junior lieutenant colonel, 58 years; and that of the junior major, 59 years.

The reason of this slow promotion, of course, lies in the small proportion of high officers to those of lower grades which is required by military organization. The only way of accelerating it is by artificially weeding out some of the officers, for to increase the percentage in the higher grades would give more of those grades than are needed, which would produce a top-heavy and uneconomical service. As stated in my last annual report, the method of examination for promotion has failed not only to eliminate a sufficient number to give a reasonable flow of promotion, which indeed it is not designed to do, but even to relieve the service of officers who are well known to be of low efficiency. Experience has shown that officers are very slow to put one another out of the service for mere inefficiency, although they will do it for disgraceful conduct; and it has also shown that influences outside the Army are very potent in preventing such action, and always will be unless the law be made so rigid that there is no escape from its operation, as is the case in the Navy. The increasing ages of officers under the inevitably slow promotion of the present system makes the subject of a remedy one of constantly increasing difficulty. The longer the cure is put off the larger will be the accumulation of superannuated officers whose disposition will confront those attempting to improve the condition. The matter would have been more easily handled 10 years ago, when an increase of the Army had produced a flow of promotion temporarily relieving the stagnation. It can be more easily dealt with now than five years hence. Some form of selection for promotion exists in the military and naval service of every important nation except the United States, and artificial elimination is found in all of them and also in the United States Navy; the only exception to this process being the United States Army. I do not think it necessary to con-

fess that we can not do what every other military or naval service in the world already does.

Every annual message of the President except one, and every annual report of the Secretary of War since the Spanish-American War has contained an urgent reference to this subject. President Roosevelt said in his annual message of December 8, 1908:

As regards the Army I call attention to the fact that while our junior officers and enlisted men stand very high, the present system of promotion by seniority results in bringing into the higher grades many men of mediocre capacity who have but a short time to serve. No man should regard it as his vested right to rise to the highest rank in the Army any more than in any other profession. It is a curious and by no means creditable fact that there should be so often a failure on the part of the public and its representatives to understand the great need, from the standpoint of the service and the Nation, of refusing to promote respectable elderly incompetents. The higher places should be given to the most deserving men without regard to seniority; at least seniority should be treated as only one consideration. In the stress of modern industrial competition no business firm could succeed if those responsible for its management were chosen simply on the ground that they were the oldest people in its employment; yet this is the course advocated as regards the Army, and required by law for all grades except those of general officer. As a matter of fact, all of the best officers in the highest ranks of the Army are those who have attained their present position wholly or in part by a process of selection.

The scope of retiring boards should be extended so that they could consider general unfitness to command for any cause, in order to secure a far more rigid enforcement than at present in the elimination of officers for mental, physical, or temperamental disabilities. But this plan is recommended only if the Congress does not see fit to provide what, in my judgment, is far better; that is, for selection in promotion, and for elimination for age. Officers who have failed to attain a certain rank by a certain age should be retired—for instance if a man should not attain field rank by the time he is 45 he should of course be placed on the retired list. General officers should be selected as at present, and one-third of the other promotions should be made by selection, the selection to be made by the President or the Secretary of War from a list of at least two candidates proposed for each vacancy by a board of officers from the arm of the service from which the promotion is to be made. A bill is now before the Congress having for its object to secure the promotion of officers to various grades at reasonable ages through a process of selection, by boards of officers, of the least efficient for retirement with a percentage of their pay depending upon length of service. The bill, although not accomplishing all that should be done, is a long step in the right direction; and I earnestly recommend its passage or that of a more completely effective measure.

President Taft said in his annual message of December 7, 1909:

The Secretary of War calls attention to a number of needed changes in the Army in all of which I concur, but the point upon which I place most emphasis is the need for an elimination bill providing a method by which the merits of officers shall have some effect upon their advancement and by which the advancement of all may be accelerated by the effective elimination of a definite proportion of the least efficient. There are in every army, and certainly in ours, a number of officers who do not violate their duty in any such way as to give reason for a court-martial or dismissal, but who do not show such aptitude and skill and character for high command as to justify their remaining in the active service to be promoted. Provision should be made by which they may be retired on a certain proportion of their pay, increasing with their length of service at the time of retirement. There is now a personnel law for the Navy, which itself needs amendment, and to which I shall make further reference. Such a law is needed quite as much for the Army.

Secretary Root said:

Nothing can be more important than that the officers of the Army shall feel that their rise in rank depends upon what they do; that ability, intellectual activity, faithful performance of duty, and gallant conduct are more certain claims to preferment than social or political influence. A system of promotions which is divorced from the efficiency records is not merely unjust, but it destroys ambition and checks the effort of the Army. * * *

The present system of promotion by seniority should be modified as to all officers now or hereafter below field rank by making a specific proportion of the promotions

to each grade for seniority and a specific proportion on the basis either of efficiency records in the War College or heretofore in the service schools, including both elements of work done during actual attendance and subsequent thereto or for gallantry in the field during war, or both, accompanied in each case by evidence of faithful performance of the ordinary duties of the line.

Secretary Taft said:

This bill, it is believed, will correct the two evils mentioned above which exist among the officers of the Army—the evil of superannuation and the evil of the presence of inefficient members, whom existing laws are not efficient in eliminating.

* * * I urge most earnestly the favorable consideration of this bill, and regard the passage of this or some similar measure as indispensable to the efficiency of the Army.

Secretary Wright said:

There is another and very necessary way of increasing the efficiency of the Army in respect of its officered personnel without increasing the number, and that is by a process of elimination of officers who are not of the best. There are a number of officers in the Army who do not take that interest in the service that is demanded, and while they keep within the letter of the law and regulations it is impossible to get rid of them and fill their places with more efficient officers, so as to keep the efficiency of the service always up to the highest standard.

* * * These conditions, to which attention is thus drawn, have long had the earnest and careful thought of some of the best minds in the service. I think it is agreed by them that there is no other subject so vitally important to the welfare of the Army. Such was the view of my predecessor, who twice recommended the enactment of legislation on the subject as indispensable to the efficiency of the Army. From such knowledge on the subject as my brief service in the War Office has given me, supplementing a considerable experience with and observation of army administration while in the Orient, I fully agree in this judgment.

Secretary Dickinson said:

I am of the opinion that the entire absence of a merit system in the advancement in their calling of the officers of the Army is not good for the efficiency of the organization. The degree to which such a system is lacking in the Army is not generally appreciated, and it is not generally understood that, except by detail to the Ordnance Department or to the lowest grade of the Judge Advocate General's Department or the General Staff, it is impossible to advance an officer a single step beyond his place in the branch of the service, no matter how great his merit may be nor how mediocre those immediately above him unless he is made a general officer. The reasons for establishing a merit system in the Army are not essentially different from those applying to any other organization.

In your last annual report to the President you yourself said:

I agree with my predecessors, Mr. Root and his successors, in the great need of a fair merit system governing both promotion and elimination.

HOUSE RESOLUTION 343, SIXTY-SECOND CONGRESS, SECOND SESSION.

This resolution, known as the Bulkley resolution, embodied a number of questions relative to the distribution of the mobile Army, the names of posts established for reasons which no longer exist, and called on the War Department for an expression of its opinion as to the stationing of the Army, with a view to putting an end to the present extravagant distribution of the Army, etc., and for other information in this connection.

This resolution, together with the reply of the Secretary of War, is attached hereto as Appendix E, and sets forth very fully the reasons which led to the establishment of many posts in regions now no longer requiring military garrisons, their cost, etc., and embodies certain general propositions as to the proper distribution of the Army and other information.

TACTICAL ORGANIZATION OF THE ARMY AND ITS REDISTRIBUTION.

The importance of a proper tactical organization of the Army has been long recognized, and during the past year a committee of the General Staff was appointed to report on this matter. This committee has prepared an excellent report on this subject, which has been submitted to the service schools and to many officers throughout the service for comment. The comments were carefully considered, and the report, with some modifications, was fully discussed in conference conducted under the personal supervision of the Secretary of War. The conference was attended by the committee of the General Staff charged with the preparation of the report, the chiefs of the various bureaus of the War Department, the Chief of Staff and his assistants, and a number of other officers. Some minor changes were suggested and made and the report printed and sent out to the service for further comment. This report is a very important one and merits most careful reading. It is attached hereto as Appendix F. The report also deals with the proper distribution of the Army and other matters relating to military policy.

Plans are practically complete for the tactical organization of the Army as far as it is possible in its present scattered condition and the assignment of officers to command of the tactical units thus organized.

The department has also prepared a general plan for the concentration of the Army on strategic lines and in areas where it can be more economically maintained. This involves the abandonment of a considerable number of military stations which are no longer required for military purposes—stations whose maintenance involves an unnecessary expenditure of public funds and whose location is such as to throw them outside the general plan for the strategical stationing of the Army. In order to carry out in an economical manner this plan of concentration and restationing, it will be necessary to secure the authority of Congress to sell such military establishments, including lands, buildings, etc., as are no longer needed, and that such funds as may result therefrom be made available, subject to the approval of Congress, for the purchase and construction of such lands and buildings as may be needed in the rearrangement above referred to. It is recommended that authority to this end be secured with the least practicable delay.

Philippine Islands.—The garrison of the Philippine Islands has been reorganized. Four regiments of Infantry and two of Cavalry have been returned to the United States, and the remaining regiments are rapidly being brought to full statutory strength. This has resulted in a considerable gain in rifles, given us better fighting organizations, and resulted in a very material reduction in the cost of administration through reduction in overhead charges.

The policy recommended in the last annual report of assigning regiments permanently to the Philippine Islands, maintaining them at full statutory strength, and gradually relieving and replacing officers and men, has been established. A foreign-service roster for officers has been completed, and it is believed that from now on the foreign service of officers, with few exceptions, can be equalized. The immobilizing of the Philippine regiments will result in a great reduction in the movement of regiments remaining in the United States.

After careful consideration of the whole matter, the tour for officers of the line and staff has been fixed at three years. Under the present excellent sanitary conditions which prevail in the Philippine Islands it is believed that three years is a perfectly safe and conservative period of service.

Philippine Scouts.—These troops have been continued under their former organization and have rendered good service in various portions of the islands. They form a very efficient body of troops.

Alaska.—The regiment in Alaska should be returned to the United States as soon as a proper Territorial police can be provided. As a protection for Alaska in case of war, it would be of little or no value, and its isolated position would, in all probability, result in the loss of its services to the Army during the war.

Hawaiian Islands.—It has been practicable to send to the Hawaiian Islands only a portion of the proposed garrison on account of the lack of funds for the construction of barracks and quarters. It is regretted that it has not thus far been possible to secure the funds necessary to shelter the troops of the proposed garrison.

There are at present in the islands one regiment of Cavalry, one battalion of Field Artillery, two regiments of Infantry, and two companies of Coast Artillery, leaving four regiments of Infantry, two battalions of Field Artillery, eight companies of Coast Artillery, and certain auxiliary troops to be sent. The organizations now in the islands are being gradually brought up to full statutory strength. On account of the isolated position of these islands and their vital importance to the United States in case of war with a strong Pacific power, the garrison decided upon as necessary for the islands should be assembled there with the least possible delay. To continue the present entirely insufficient garrison is to invite disaster.

Panama Canal Zone.—During the past year one regiment of Infantry has been stationed in the Canal Zone. This regiment is at peace strength, it having been impracticable to obtain from the canal authorities sufficient buildings to quarter a regiment at full statutory strength or to obtain from Congress money to build sufficient quarters. Here, again, as in the Hawaiian Islands, is a condition which demands serious attention. The canal is rapidly approaching completion, and barracks and quarters for an adequate garrison must be provided in the immediate future. It is not practicable, from a sanitary standpoint, to maintain a garrison under canvas on the zone. The plans for the defense of the canal provide quarters for the necessary garrison, consisting of troops of the mobile Army, Coast Artillery, and certain auxiliary troops. A site has been selected, and the canal commission has taken some steps toward preparing the ground, but no money has been made available for the construction of barracks and quarters, and unless action is taken during the next session to provide funds the canal will be completed without barracks and quarters having been provided for the necessary garrison. If troops are sent there under canvas, the death rate will be heavy. The canal has been constructed at great expenditure of money, and the relatively small sum necessary to shelter the troops required to protect it should be provided. It is not economical nor is it advisable from a sanitary standpoint to attempt to use the old canal buildings to any considerable extent. To take them down, transport them to the proposed camp site, and reerect them will cost per regiment, in round numbers, a little more than half as much as

it would cost to build quarters of permanent construction. The old buildings will not be satisfactory and their life will be short, probably not over 10 or 15 years at the most. True economy indicates the prompt construction of buildings of permanent type, suitable for the Tropics.

CORPS OF ENGINEERS.

The officers and men of this corps serving with troops have maintained the traditions of the corps for efficiency. The number of Engineer troops is inadequate to meet properly the needs of the service. It is believed that they should be increased and that ample provision should be made to supply the proper pontoon and other trains.

Steps have been taken to secure gradually from civil life, through examination, the officers necessary to make up the greater portion of the 60 additional officers authorized by Congress last year. The examination proposed by the Chief of Engineers and approved by the Secretary of War for candidates for appointment in the Corps of Engineers from civil life is most searching, and it is believed that the class of men secured will be fully up to the standards of the corps. The law wisely makes provision for the probational appointment of the officers from civil life for one year, in order that their fitness for permanent service in the corps may be determined. It is earnestly recommended that a similar provision be made applicable to appointments in the mobile Army from civil life. The Medical Department, under existing law, has an opportunity to become thoroughly familiar with the qualifications of young men entering it, but no such provision has been made for the mobile Army; the successful candidates are commissioned therein immediately after examination.

CAVALRY.

The policy outlined in last year's report of stationing Cavalry at points best suited for its training, supply, and upkeep has received the careful attention of the department during the past year and has been considered by the committee of the General Staff charged with the preparation of the report on the organization of the Army.

A board of carefully selected Cavalry officers has been appointed to study the organization of the best European cavalry, with a view to determining definitely whether or not we should make any radical change in our Cavalry organization. Cavalry reorganization has been much discussed throughout the service during the past year. The subject is an important one, and one which should be given most careful thought. It is believed that the governing principles in Cavalry organization should be:

That the Cavalry regiment be so organized as to give the largest organization which a colonel can handle rapidly and efficiently in mounted action, which must be considered to be the principal rôle of Cavalry, and the rôle for which it is especially trained. At the same time, thorough instruction in dismounted fire action should be continued as at present, and the suitability of the organization to this end should be given careful consideration. This feature of its work, however, should not be given such prominence as to obscure the first purpose for which this arm is maintained.

The question of the extent to which the revolver should be issued is still under consideration.

Instruction in the use of the saber is still very unsatisfactory throughout the service, and radical improvement is necessary if our Cavalry is to be considered efficient as such.

There is still a serious lack of attention on the part of many of the senior officers of Cavalry to proper Cavalry training, especially in all that pertains to leading and to training their horses and men to rapidity, boldness, and dash in mounted work. Administration has assumed altogether too much importance; the colonel and field officers are too little on horseback and too much in their offices. This condition is made evident through reports of the Inspector General of the Army and other sources.

The establishment of one or more posts where Cavalry brigades may be stationed will prove of great value to that branch in teaching the uses of a larger unit, and of regiments in combination with others. Since the Civil War, when Cavalry operated in large bodies, rarely has a unit as large as a brigade been handled as such.

It is becoming more and more difficult to procure satisfactory mounts for the Cavalry. The wholesale exodus from the country of the best thoroughbred blood threatens seriously to curtail the future supply of suitable horses. Most of our breeders are going to the heavy draft horse type. It is believed that the matter is such a serious one as to threaten the future development of the American horse, and is rapidly curtailing the sources from which the Army can secure suitable horses. The action taken by Congress in making available $50,000 for the use of the Agricultural Department for the purpose of breeding is encouraging and indicates that the subject is commencing to receive some attention.

Proposed legislation has at times embodied a provision to reduce our Cavalry by five regiments; this should not be done. Considering the small amount of Cavalry in the militia it is most essential that the present amount of Cavalry in the Regular Army should be maintained, and maintained at the highest degree of efficiency.

The Cavalry equipment board has been conducting a very careful and thorough series of observations and experiments with the new Cavalry equipment; this equipment is now being subjected to a severe service test. The indications are that the equipment selected will be satisfactory. The details have not yet been fully determined, but it can be safely stated that the result will be a much better saddle, a more conveniently arranged pack, and a far better saber than the present one. Various other articles of the Cavalry soldier's equipment are also under consideration by the board.

CAVALRY IN PARKS.

The present policy of administering and policing public preserves by troops breaks up a Cavalry regiment into fractions, thus greatly impairing its usefulness. The duty is not a military one, and the expense involved is specifically for the Interior Department, while it is charged against the War Department. It is believed that this work should be done by park rangers.

FIELD ARTILLERY.

The system of inspection of the Field Artillery mentioned in my last report has been continued and has resulted in a higher standard of efficiency in this arm.

The School of Fire for Field Artillery, established at Fort Sill, Okla., has continued its good work, and the doctrines established there are gradually being imparted, both to the regular and militia Field Artillery, by the officers who have returned to their regiments after having taken the course.

It is strongly recommended that field officers of Cavalry and Infantry be sent to this school for at least one month of each term, so that these officers who, in time of war, will probably be given command of independent fighting units, may know the capabilities of properly handled Field Artillery, and will thus be able to demand of it the support it is capable of giving and yet not expect of it the impossible. It is believed that the School of Fire will, in a few more years, have taught the Field Artillery how to shoot. Its course is thoroughly practical, and its efficiency has been due mainly to the fact that the student officers are held strictly to the one aim of this school, which is to show them the best way to adjust their fire and to teach them, after adjustment, what this fire should do against any designated target.

Since 1907 attempts have been made to prescribe an organization and equipment for the Mountain Artillery. During the past summer a march was made by the regimental headquarters, battalion headquarters, and three batteries of the Fourth Field Artillery, covering 844 miles, this command being supplied with pack transportation. The command crossed the Great Divide four times, held target practice at 13,400 feet altitude, and gave such tests to the provisional organization and equipment as harmonized existing differences of opinion concerning these questions. The report of this board has not yet been received, but it is believed that during the coming year an effective organization and equipment will have been provided. The mountain batteries are still equipped with the old type 2.95 Vickers-Maxim mountain gun, which is considered out of date and obsolete. The new 3-inch mountain gun will be tested at Sandy Hook in January, and it is hoped there will be no further delay in supplying this new matériel to the mountain regiments of the Regular Army.

The Fifth Field Artillery is still unequipped with its heavy field guns, delay having occurred in the testing and manufacture of the heavy howitzers. It will be necessary to hasten the manufacture of these guns so that they may be put into the hands of the regiment. At present there are no drill regulations nor is the personnel instructed in their practical and technical use. At present there is not a single complete organization of Heavy Field Artillery in the United States, with the exception of one battery of 4.7-inch guns at Fort Sill and one at West Point.

During the year the Board of Ordnance and Fortification has purchased from abroad one De Port 75-millimeter field gun. This has been tested at Sandy Hook and is now at Fort Riley. It is believed that many features of this gun should be adopted in the future manufacture of our light field gun.

An observation ladder was also purchased and is now under test by the Field Artillery board at Fort Riley.

The experiments with the portable searchlight are still being continued.

It is to be regretted that, due to recent legislation by Congress, it has been necessary to order home from France three of our Field

Artillery officers who, due to the kindness of the war department of that country, were given permission to study their artillery. One of these officers was to have taken the course at the French War College and the other two detailed to serve for a year with French artillery regiments. It is hoped that the French Government has thoroughly appreciated the necessity which compelled the return of these officers and the regret of this department that their recall was made necessary by unexpected legislation.

The reports of service practice show that the Field Artillery is beginning to appreciate their former deficiency and are adopting new methods in the use of their allowance of ammunition for target practice which will give increased instruction to the officers present at this practice. A large percentage of the Field Artillery officers have been absent from this practice, these officers being on detached service, either in staff departments, at the service schools, at West Point, as aides, recruiting duty, or abroad. It is believed that these officers or their superiors could so have arranged their duties as to make it possible for them to be at the practice at the nearest Field Artillery unit, whether they were assigned to it or not, and it is therefore recommended that, during the coming practice, the Field Artillery officers in the United States on detached service, no matter what the nature of their duties, be directed to attend this annual service practice, as such practice is necessary for their efficiency as officers.

In my various annual reports I have called attention to the fact that no branch of the Army needs legislation for its reorganization and increase more than the Field Artillery, but have refrained from making such recommendations until plans for the reorganization of the Army as a whole are presented for your consideration. Such plans have now been presented and these recommend that the first increment of our skeleton field army shall be two regiments of Infantry, 6 battalions of Field Artillery, 1 field company of Signal troops, 5 field hospitals, and 5 ambulance companies. The increase of the Field Artillery is urgent and necessary for the proper defense of our country, and it is recommended that this deficiency be presented to Congress in such explicit terms that there may be no mistake concerning the views of the War Department as to the effect of this deficiency upon the effectiveness of our Army as a fighting machine. The garrisons in our foreign possessions demand 6 battalions of Field and Mountain Artillery. These, when sent, will leave this country with but 1 regiment of Heavy, 1 regiment of Horse, and 1 regiment of Mountain Artillery.

The mobile army of the United States has the following troops:

	Aggregate.	
	Peace.	War.
Infantry, 30 regiments	29,016	46,530
Cavalry, 15 regiments	13,865	18,585
Total	42,881	65,115

The number of guns required to make this force of Infantry and Cavalry effective in time of war at the rate of 3.16 guns per 1,000

gross Infantry and Cavalry [1] would be 206, but the number provides no reserve guns to take the place of those which might be disabled. It would take at least 7 guns to provide this reserve supply, or a total of 213 guns for the present Regular Army at war strength. This is an approximate equivalent of matériel for 9 regiments of Field Artillery. There is at present matériel in the hands of troops for 6 regiments of the Regular Army, or a deficiency of matériel for 3 regiments.

The Organized Militia has:

	Aggregate.	
	Peace.	War.
Infantry, 136½ regiments	97,775	211,711
Cavalry 78 troops	4,265	8,066
Total	102,040	219,777

Assuming the same proportion of guns per 1,000 gross strength of Infantry and Cavalry, gives 695 guns needed to make an efficient fighting organization of the Infantry and Cavalry in the existing Organized Militia. To furnish the minimum reserve guns for the ammunition batteries would take at least 24 additional guns. The militia at present has 212 guns, so they are deficient 517 guns.

The proportion of 3.16 guns per gross 1,000 Infantry and Cavalry is the proportion of guns given by our present regulations, and it is considered too small by many military experts. It is considered the minimum number needed to make effective our Army organization. It is thus seen that our Regular Army is deficient in Field Artillery organizations by 6 battalions and the guns which go with them, and all the Artillery organizations in both the Regular Army and militia are deficient in an organization which will give them proper ammunition trains. At present no provision has been made for an effective service of ammunition to the guns. The results of recent war have shown that a modern field artillery piece will often be called upon to expend in a single day approximately 500 rounds of ammunition; that most of the guns on the firing line will expend between 200 and 300 rounds. Unless adequate ammunition trains are organized and provided many of our guns would, in a single day's fight, use all the ammunition which can now be carried for them. The importance of establishing these trains is not a matter of discussion. Our militia has 53 batteries; it should have 174 batteries to give it a proper organization.

It is a military axiom, accepted by all military men, that superiority of fire is needed before troops can advance over the modern battle field. Infantry during its march of approach can bring no effective fire upon the hostile artillery which is sweeping the terrain over which it is advancing. If the fire of this hostile artillery is not neutralized the infantry can not advance even to the point where its own small arms can be effective against the hostile infantry, so that in order to permit our infantry to advance we must have sufficient artillery to at least neutralize any hostile artillery which may be brought against us, and if we do not have this our armies are destined to ultimate defeat.

[1] The Field Artillery matériel in the hands of the regular troops as given above includes 12 batteries of 2.95 Maxim mountain guns, which are not a part of the adopted system, and must be replaced. There is consequently a deficiency of modern matériel in the hands of troops of 5 regiments, or 30 batteries.

It has been noticed that members of committees of Congress have asked how many batteries we can furnish the militia and how many batteries the militia now has. The number of batteries which the militia now has has nothing to do with the question of their efficient organization for part of an effective Federal defense. If the Nation insists that the militia is to form part of our first defense and will be used as part of the Federal troops, the National Government must be willing to pay for the adequate development of that part of our military resources. The governors of the States will undoubtedly help the Federal Government in so organizing the militia that it will form an efficient fighting unit when called to the defense of the United States; however, the States can not be expected to pay for an organization which is of use only to the National Government, nor can they be expected to pay for the maintenance of the expensive Cavalry, Field Artillery and auxiliary arms which are of no practical use to the States, but which are essential to the militia to make it effective as part of the Army of the United States. Every attempt has been made upon the part of the War Department to increase the amount of the Field Artillery and the auxiliary arms in the militia, but many of the States refuse to organize their proportion of these expensive arms and they will probably continue to so refuse until Congress definitely appropriates moneys which can only be used by the States for the organization of these arms. The existing militia at war strength would require 174 batteries to make it effective as part of the Federal defense. It has, at present, only 53 batteries. We have on hand matériel for 67 batteries, but if the necessary appropriations were made so that the militia would organize its quota of Field Artillery, the Ordnance Department would be unable to furnish them with matériel for 107 batteries and these batteries could not be supplied with one round of ammunition. The shortage of ammunition for even the existing batteries now in the Regular Army and militia is so great as to cause grave concern to this department. The dangerous shortage of both guns and ammunition for Field Artillery should be persistently and forcibly brought to the attention of Congress, so that Congress will appreciate the importance of increased annual appropriations which will supply, in a short time, this deficiency. The present rate of annual appropriations will not provide these guns and ammunition in any reasonable time, and these appropriations should be greatly increased.

Horses for the Field Artillery.—The present appropriations for horses for the Field Artillery do not seem to be able to obtain the class of horses necessary for its heavy guns. Fire departments and police departments pay from $250 to $300 for the horses which they need. The same class which they use for draft purposes is required by the Field Artillery, and it is believed that the Chief of the Quartermaster Corps should be authorized to purchase horses for this service up to these amounts and furnish to the light batteries 6 to 8 year old horses which can be used by the batteries shortly after issue.

COAST ARTILLERY.

PERSONNEL.

The results of target practice during the past year show continued improvement over those of preceding years and are conclusive evidence that the Coast Artillery Corps has reached a high standard of

efficiency in Coast Artillery work. This practice is held under conditions simulating as nearly as possible those that would obtain in action, so that the results obtained may be considered as a fair measure of those we may expect to secure in the defense of our fortified harbors against naval attack.

The potential value of the Coast Artillery troops for service with the mobile Army in any war in which the United States possesses undisputed supremacy at sea has been shown by the recent organization of provisional regiments of Coast Artillery and the mobilization of these provisional regiments into a provisional brigade of Coast Artillery troops at full strength and fully equipped for field service.

MATÉRIEL.

About 85 per cent of the gun defenses required for the United States has been completed. The most important localities remaining to be fortified are the entrance to Chesapeake Bay and the harbor of San Pedro, Cal., which is used as the seaport for the city of Los Angeles and has become a port of importance. In the United States, the accessories (fire-control apparatus, searchlights, power plants, submarine mine defense, and ammunition) were not supplied when the batteries were constructed. Accessories are necessary in order to use batteries with maximum efficiency. The approximate percentage of completion of the accessories for the United States are as follows:

Fire control	46
Searchlights	41
Power plants	10
Ammunition	70
Submarine mine defense	81

During the past year satisfactory progress has been made in the construction of defenses at Manila, Subic Bay, Honolulu, and Pearl Harbor, and about 60 per cent of the defenses for Panama Canal have been appropriated for. In the insular possessions, the accessories have been supplied contemporaneously with the gun defense, so that when the batteries are all completed the accessories will enable them to be used with the maximum efficiency.

INFANTRY.

As previously stated in this report, the Infantry regiments in the Philippine Islands are rapidly being brought to full statutory strength, and the same policy will be followed with those in the Hawaiian Islands and the Panama Canal Zone. All regiments in the United States should be brought to a strength of approximately 1,200 men. Small companies are not satisfactory units for training.

Immediate steps will be taken to organize Infantry regiments into brigades and to station, whenever practicable, the regiments of a brigade at the same post. Wherever this is not possible, the brigade organization will be made and the regiments brought together for field training whenever practicable.

The new Infantry Drill Regulations are giving satisfaction and are a great improvement over the old. The new equipment has been thoroughly tried out and has met with general approval.

The training of the Infantry in the use of the bayonet is still far from satisfactory, but improvement is being made. It has been

difficult to impress upon colonels and senior officers of the regiment the importance of thorough training in the use of the bayonet, and the great importance of this weapon is not appreciated despite recent examples which demonstrate its value beyond question.

During the past summer a provisional regiment of Infantry at full statutory strength, fully supplied with transportation and with a full complement of officers, was organized for the purpose of trying out the equipment, studying the question of the amount of transportation necessary for such a regiment, carrying out experiments in field firing, marching, etc. The results are valuable. The consensus of the opinion of the officers attached to the regiment is that a regiment organized as was this one forms a very satisfactory and efficient organization for field work.

There has been a very widespread interest in the Infantry concerning the proper tactical organization of the arm. The feeling in this arm has been general that existing regiments should be brought to full strength before new ones are created. It is very satisfactory to see this willingness to abandon all thought of personal promotion in favor of the best interests of the arm.

NONMILITARY DUTY AND POOR ADMINISTRATIVE METHODS.

UNNECESSARY PAPER WORK.

The service corps promises a large measure of relief for troops from the nonmilitary work now done by soldiers at Army posts, which still continues to be excessive and to interfere seriously with military training and efficiency.

Reforms in paper work.—During the past year extensive changes have been made in returns, simplifying paper work and greatly reducing its volume. The following forms have been modified with a view to reducing the volume and simplifying the character of this class of work: Pay roll; final statement; officer's individual service and efficiency report; descriptive list; descriptive and assignment card; company return; post return; regimental return; division, department, and brigade returns. The new pay roll is especially appreciated and reduces the amount of work required in making it out from 40 to 50 per cent.

A great simplification in the method of correspondence has been accomplished, which will reduce the amount of work from 25 to 30 per cent. The department realizes that something must be done to relieve the line officer of the burden of correspondence and returns which has become unduly heavy, so heavy, in fact, as greatly to interfere with his purely military work. Post administrative methods are still unduly cumbersome and occupy a great deal of time which should be given to the instruction of troops. Soldiers of the mobile Army, both officers and men, receive too little instruction under arms.

The question of changes in the muster roll has received most extended and careful consideration and has met with general approval. No question connected with the reduction of paper work and the abolition, modification, or reduction in frequency of returns has received so much and such careful consideration as the proposed changes in the muster roll, and it can be stated, without fear of successful contradiction, that the proposed change will not deprive the department of any information which it now procures through the muster roll and that it will greatly reduce the burden of paper work

now thrown on organizations, not only in the preparation of its rolls, but in the large amount of correspondence resulting therefrom.

The department is now considering a proposition to reduce further the amount of paper work by having one supply officer at a post who will be accountable for the great bulk of property issued to troops and who will make returns for practically all property at the post other than that in the hands of the Medical Department property, to be issued to organization commanders on memorandum receipts, as certain quartermaster's supplies are now issued. This will cut down enormously the paper work of the line officer, and incidentally the work of the supply corps by greatly reducing the number of returns. The question of unit returns is also under consideration, and when adopted will greatly reduce paper work.

For a number of years decentralization has been going on in the supply corps. The number of stations of troops has been greatly reduced. Recently much simpler methods of correspondence have been adopted. All these changes tend to a reduction in paper work and should be accompanied by a corresponding reduction in the clerical force. I believe that the provision in recent legislation requiring a reduction in the clerical force will be for the best interests of the service and that the reduction should be progressively made until it is evident that it has reached a point beyond which further reduction can not be made without interfering with proper administration. I believe the reduction should be made, not by discharge, but by failing to fill vacancies. If this procedure is followed no injustice will be done to faithful employees of the Government. In order to make the plan more workable provision should be made for the free transfer of clerks between the different bureaus and offices of the department.

ORGANIZED MILITIA.

GENERAL REMARKS.

The aggregate strength of the Organized Militia, as shown by the report of inspection made under section 14 of the militia law, is 121,743, a net gain of 3,755 over the strength reported last year. A number of organizations have been mustered out and a number of organizations have been mustered into the service. It is gratifying to state that most of the units created during the year are of the auxiliary arms, as it is in these branches that the greatest deficiency now exists. A still further considerable development of auxiliary troops is necessary in order to render the Organized Militia as a whole a properly balanced force. The State authorities are beginning to appreciate more fully the necessity of thus properly balancing their guards by the creation of more auxiliary troops in order to render the existing Infantry effective in campaign. The policy has been to encourage the completion of existing units and to insist on a fair degree of efficiency in them before lending aid in building up new organizations.

This has been a year replete with results which will ultimately lead to much good. A large measure of these results is due to the detail of Regular Army officers as inspectors-instructors with the Organized Militia under the act of Congress approved March 3, 1911. Under this act 48 Infantry, 8 Field Artillery, 9 Cavalry, and 8 Coast Artillery officers have been on duty continuously throughout the year with the

Organized Militia. These officers have brought the Regular Army and militia in closer touch than ever before, have for the first time enabled the War Department to determine the actual existing conditions in the individual units of the militia, and have imparted a systematic training adapted to the needs of the particular unit. The value of the work of these officers will become more apparent as time passes on. An effort will be made in the near future to increase the number of such officers in the proportion of one for each Infantry brigade and eventually one for each regiment or equipment, instead of one for each individual State, as at present, and an increased number will be detailed to the auxiliary arms, as experience shows the necessity therefor. An increased number of noncommissioned officers from the Regular Army has also been on duty with the Organized Militia, and these men have generally given satisfaction and have supplemented the work of the regular commissioned officers.

The usual camps for the instruction of officers have been held with gratifying results. In addition, in the Field Artillery a course of a month's instruction at the School of Fire for that arm at Fort Sill, Okla., was participated in by 24 officers, 20 of whom received certificates of proficiency. These graduates will materially improve the firing of this arm by disseminating the instruction they have received. There was the usual attendance of officers of the Organized Militia at the garrison schools at Army posts, and, in addition, the first session of the field-service school for medical officers, lasting six weeks, was held. Five medical officers of the Organized Militia attended and received certificates of proficiency. These officers are now competent to meet all the requirements of medical officers in the field. There has been an improvement in the target practice of all arms, especially in the Coast Artillery. In the Infantry and Cavalry less attention has been devoted toward training a very few men to a very high state of efficiency, and more men have reached a reasonable degree of skill. This is a step in the right direction.

Maneuvers have been or are being participated in by about two-thirds of the Organized Militia. In these exercises an effort is being made to dispense with using the same ground over and over, with its semipermanent camps. Conditions more nearly simulating actual field work have been substituted. This result is accomplished by conducting a maneuver campaign where the opposing forces start several days apart and approach and locate each other as in actual campaign. This necessitates the proper use of the different arms, the location daily of new camps, the providing of supplies at different points daily, and has generally been more interesting and instructive to those participating than was the old plan of using the semipermanent camp during the entire period. But, at the same time, it must be borne in mind that only well-prepared troops can successfully participate in such a maneuver campaign, and as a whole the Organized Militia has not yet reached this proficiency.

Much time was devoted by the War Department during the year to the details of a plan by which the Organized Militia, when called into the Federal service as militia, can mobilize in an orderly and systematic manner with the minimum of confusion and friction. The cooperation of the States was secured in formulating this plan and it is believed that an excellent scheme in all of its details has now been evolved. This plan has been promulgated to the States with a request

that they locate their mobilization camps and perfect other necessary details under it. As the loss in campaign begins immediately upon the muster into the service of troops, the States have been requested to designate recruiting officers for war, to supply them with necessary blank forms, and to have these officers familiarize themselves now with the duties they may later have to perform. The States are now manifesting a commendable interest in mobilization and war recruiting plans.

Where the National Guard of a State is efficient, it is generally found that Federal property is well cared for, and neglect in the care of property is most noticeable in those few States which still permit organizations to remain as part of their Organized Militia which are of little credit to the local and National Governments. Many of these organizations have been mustered out, but many more must go or be regenerated. Failing in this the Federal Government will cease to list them as part of the Organized Militia and the benefits of the militia law will not continue to be extended to them.

DIVISION DISTRICTS.

In order to organize the militia into higher units than regiments, so as to provide for its prompt and orderly employment in the event of emergency, it is proposed to divide the territory of the United States into division districts, each district to contain a tactical division in so far as the infantry is concerned. Several of the larger States would each constitute a district in themselves. The other States would be grouped, and an effort would be made to so balance up their guards that the combined organizations in the district would form a tactical division. The National Guard must be so organized before it can be effectively employed against an enemy.

With the organization of these division districts the deficiencies of the Organized Militia will be more apparent, and they can gradually be made good. Excesses in any arm can gradually be converted into organizations of a different arm to make up deficiencies. With such a plan worked out in peace and published for the information of all concerned, it is believed that the State authorities will be anxious to cooperate with the Federal Government in completing and building up these tactical divisions. These having been once established, plans for the orderly mobilization of the Organized Militia can be put on a very definite basis. The Federal supply depot system for matériel and equipment should then be extended to these division districts and the whole system of mobilization made automatic and decentralized from Washington.

The following remarks, relative to Field Artillery for the Organized Militia, are quoted from last year's report, and the condition therein referred to is essentially unchanged, though there has been some addition to the number of guns and the amount of reserve ammunition:

> Were the existing Infantry and Cavalry organizations called into the field at their war strength, they would constitute a force of about 228,000 men and would require, at 3.16 guns per 1,000 gross Infantry and Cavalry, a total of 720 field guns. The proportion, 3.16, here adopted is deemed the minimum safe number and is less than is the proportion of field guns to infantry and cavalry in England, France, Germany, Russia, Italy, and Austria—England, 6.72; Germany, 4.91; France, 4.21; United States, 3.16. Instead of 720 guns, the Organized Militia is provided with only 200, leaving a deficiency of 520 guns, or 130 batteries of various calibers. In the matter of

ammunition the situation is worse, as in the absence of any specific appropriation no ammunition has been accumulated for the Organized Militia, and the Regular Field Artillery is also without a sufficient supply. The ammunition which should be immediately available upon the outbreak of war for the efficient service of these guns should be purchased at once, and arrangements should also be made to provide for an adequate reserve supply of ammunition. Detailed estimates for the moneys needed to purchase this matériel and ammunition have been submitted, and it is hoped that appropriations will be made by Congress which will permit this ammunition and matériel to be purchased in the near future. Without an adequate provision of guns and ammunition, the efficiency of the entire Organized Militia would be practically nullified, for no large force can take and keep the field to-day without its artillery. The guns and ammunition can neither be manufactured nor purchased after war breaks out without such delay as would be fatal to our success in case of war with a first-class power.

FEDERAL PAY BILL.

On July 30, 1912, the Military Committee of the House favorably reported the militia pay bill (H. R. 8141). This bill was reported practically in the form agreed upon by the War Department and the representatives of the Organized Militia, and it contains provisions of the greatest importance, both to the Organized Militia of the country and to the Federal Government in its endeavor to organize and maintain an efficient body of citizen soldiery available for general military purposes.

The general efficiency and preparedness for field service of the Organized Militia is improving each year in all but a very few States. The standards of efficiency set by the Federal Government are being constantly raised. In order to maintain this increased efficiency, the demands made upon the personnel have been greatly increased. An enlisted man must attend regular instruction in the armory, including gallery practice, target practice on the range, and finally, from 5 to 10 days in camp service for instruction. The law requires attendance at not less than 24 drills and at least 5 days spent in camp service for instruction. But the present standards of efficiency demanded by the Federal Government, and which must be insisted upon if the Organized Militia is to be considered a dependable force, can not be reached or maintained without devoting additional time, especially on the part of the officers. Patriotic young men of the country are often obliged to forego joining the National Guard on account of the expense which must be borne by the personnel itself; the time required is also an important item to the hard-working young man. It is hoped that the pay allowed under the terms of the bill will be sufficient to permit the personnel to serve without financial sacrifice.

Under the terms of the bill the maximum percentage of pay has been allowed those who must bear the brunt of the burden. The company, troop, and battery commanders are the very backbone of the Organized Militia. The efficiency of the whole force rests largely in the ability of these commanders to maintain their units full of good men under training. The responsibility for the bulk of the Federal property in the hands of the Organized Militia also rests on these same commanders.

The present Organized Militia is being trained at a cost to the Federal Government of over $5,000,000 per year. In addition to this, the several States appropriate yearly amounts aggregating about $5,000,000. It would be a most extravagant policy to continue to build up this force only to find that we can not employ it in the event

of an emergency necessitating the use of troops in addition to the Regular Army. Nor would it be a wise policy to use these organizations only for training purposes, with the idea of disrupting and converting them into some other kind of a force, available for general military purposes, at a time when we need such a force and when the emergency is upon us and we wish to employ our land forces against an enemy.

It is therefore provided in section 5 of the bill that:

> The President, with the consent of Congress, in time of war or when war is imminent, or in other grave emergency requiring the use of troops in excess of the Regular Army beyond the limits of the United States, may by order transfer to the Army of the United States any portion of the Organized Militia receiving, or entitled to receive, the benefits of this act, to serve therein for the remainder of their respective terms of enlistment or commission unless sooner released by order of the President, and any Organized Militia so transferred shall from the date specified in the order of such transfer become for the time being a part of the Army of the United States and subject to the same laws in so far as the same may be applicable to them during their service under such transfer, excluding the retirement laws, and be entitled to the same pay, emoluments, and allowances as officers and enlisted men of the Regular Army of the same grade and the same prior service, and shall be available for any duty for which the Regular Army or Volunteer Army may be employed.

The foregoing provision makes certain that part of section 5 of the militia law which prescribes that:

> Whenever the President calls forth the Organized Militia of any State, Territory, or of the District of Columbia, to be employed in the service of the United States, he may specify in his call the period for which such service is required, and the militia so called shall continue to serve during the term so specified, either within or without the territory of the United States, unless sooner relieved by order of the President.

Under the provisions of this bill the Organized Militia can be given a definite tactical organization in peace which will continue in war. These organizations can pass without break from the service of the State to the service of the United States, and be available for general military purposes.

This Federal pay bill is one of the most important measures that has been before the country in years. Providing, as it does, an organized, trained force which Congress can make available in certain cases of emergency, it solves one of the most difficult problems in connection with our military policy. It is in the highest interest of the Federal Government and the States that this bill should become a law With such a law the personnel of the Organized Militia will be given a definite status for peace training and war service, and the Federal Government will know just what organized forces will be available for immediate service at any time, and it will thus be able to put all mobilization and war plans on a practical working basis. It is earnestly hoped that this bill may be promptly enacted into law.

MILITARY ACADEMY.

The department is still making strenuous efforts to increase the number of graduates from the Military Academy, as it is believed to be essential to the best interests of the service that a larger proportion of the officers of the Army should be graduates of this institution. There are now (Sept. 15) 140 vacancies at the academy. During the past year an additional examination was held for the purpose of filling as many as possible of these vacancies. It is greatly to be regretted that those responsible for the appointment of cadets do not make greater efforts to fill vacancies from their districts.

The Secretary of War and the President, during the next to the last session of Congress, urged a bill to provide for filling vacancies at the United States Military Academy. The plan of the bill was to provide that when vacancies exist not to exceed 30 should be filled from the whole list of alternates, selected in the order of their merit as established upon the entrance examination. These appointments were to be credited to the United States at large, and to be without prejudice to any other appointment authorized by law. In case, under this act, the Corps of Cadets should go over its authorized strength, it was provided that the admission of alternates should cease until the corps was reduced to its authorized strength. This bill was favorably reported by the Senate Committee on Military Affairs, and was incorporated in the Military Academy bill, but was lost on the floor of the Senate in the closing days of the session. It is hoped that this bill will be enacted into law, as it will tend to keep the academy full and to increase greatly the number of graduates. It will also encourage alternates to present themselves for examination. At present many alternates do not report, and in case the principal fails a vacancy remains in the district they represent. Under the system proposed, of appointing the first 30 qualified alternates, great encouragement will be given to alternates to present themselves for examination, as they will feel that even if their principals pass there will be a reasonable chance of appointment.

SERVICE SCHOOLS.

The work of the service schools during the past year has been very satisfactory. The high standard of the schools has been maintained, and the results of the training which officers have received during recent years has exerted the strongest kind of an influence for the improved efficiency of the Army. The work of the Field Artillery School of Fire at Fort Sill has been attended by most satisfactory results, as has the short course at Fort Leavenworth designed for the preparation of field officers for the Army War College course. It has been apparent for some time that if high standards in equitation are to be established in the service some means must be found for interesting the field officers of the mounted service, and with this end in view a short course for field officers was established at Fort Riley. The results, as shown by an awakened interest in all matters pertaining to advanced equitation and better mounts, have been most gratifying. The senior officers now appreciate to an extent they never have before the work which is being done at Fort Riley; the younger officers who have graduated from the school and from the schools of equitation abroad are given a much larger measure of encouragement in carrying out instruction throughout the mounted service.

The work of the garrison schools is steadily improving and becoming more practical in character.

ADDITIONAL OFFICERS.

Two hundred extra officers of the line were authorized by Congress on March 3 1911; 155 vacancies in the grade of second lieutenant existed on June 30, 1912. An examination for appointment from civil life was held in September. 1912, but the reports have not yet been received. An excellent class of candidates has been se-

cured. The present examination requirements offer strong inducements to men of higher education, and a larger proportion of this class of men are presenting themselves. The standard of the examination for enlisted men has been materially raised, although not to such an extent as to make the examination too difficult for a young man who is to hold the position of an officer of the Regular Army. The requirements for enlisted men are set forth in General Orders, No. 79, War Department, April 28, 1909, and in General Orders, No. 131, War Department, September 26, 1911, copies of which are hereto attached, marked "Appendix G."

Even when the additional officers incident to this increase have been secured, as well as those given by the bill for the readjustment of rank, the demands for detached service will still far exceed the number of officers available without the detail of such a number of officers from duty with troops as will seriously embarrass the proper training of the Army.

MANEUVERS.

In 1912 joint maneuvers of the Regular Army and the Organized Militia have been by far the largest and most extensive held in this country, and involved approximately 125,000 troops. Extensive maneuvers were held near New York, at various points in the Middle West, and on the Pacific coast. The detailed reports have not yet been received, but the preliminary reports indicate that, taken as a whole, the work was satisfactory and show that improvement in the militia has been progressive.

These maneuvers are not only valuable for the practical training given to officers and men, but they are especially valuable in that they involve the study of certain problems which would have to be considered in time of war; further, because they bring to the attention of many officers the difficulties with which the defense would have to contend. The principal weakness developed at the maneuvers has been in the supply departments of the militia.

THE ADJUTANT GENERAL'S DEPARTMENT.

An unusual amount of work has been thrown on this department during the year incident to the movement of troops, preparation of data regarding proposed legislation, etc. The work of the department has been satisfactorily performed. The simplification and reduction in the number of forms and simplification of the methods of correspondence will result in a great saving of work in this department.

RECRUITING.

Assignment of recruits.—During the past year plans have been carefully worked out and put in operation which will enable the assignment of recruits twice a year to organizations, thus greatly facilitating instruction.

The large average shortage, 6,359—7.8 per cent—in the enlisted strength of the Army indicates very clearly the difficulty which has been experienced in finding suitable recruits, even with the present three-year period. The effect of the lengthened period can not be foreseen, but that it will not make recruiting easier is evident.

With reference to recruiting under the new law: The Adjutant General states, under date of December 3, 1912, that the only complete data thus far received regarding enlistments and reenlistments for the entire month of November, 1912, are from the recruit depots and depot posts, from which telegraphic reports have been received. The following information is accordingly supplied:

Total number of enlistments and reenlistments at recruit depots and depot posts during the month of November, 1911	2,896
Total number of enlistments and reenlistments at recruit depots and depot posts during the month of November, 1912	1,267
Total number of enlistments and reenlistments at recruit depots and depot posts during the month of October, 1912	1,698

The foregoing comparisons show a falling off of about 56 per cent for November, 1912, as compared with November, 1911, and about 25 per cent for November, 1912, as compared with October, 1912. As proportionately fewer reenlistments take place at depots and depot posts than elsewhere, it is reasonable to hope that complete data will reduce somewhat the percentage of loss.

JUDGE ADVOCATE GENERAL'S DEPARTMENT.

The work of the Judge Advocate General's Department has been efficiently performed and the work of the office, conducted under the personal supervision of the Judge Advocate General, has been of a highly constructive order and most far-reaching and valuable results have been obtained. In addition to the reforms outlined in last year's report, relative to the handling of deserters, the separation of statutory and common-law offenders from military convicts, the opening of a way for the thoughtless offender to make good and become a useful soldier instead of an outcast without citizenship, the Articles of War have been thoroughly revised—a work itself of great magnitude and of tremendous import to the service, which it is hoped will be enacted into law at the next session of Congress, along with the project of legislation submitted by the Judge Advocate General for the reorganization of our prison system. A digest of all opinions for a period of approximately 10 years has been prepared and issued to the service. This latter work has been most thoroughly done, and it has been so prepared and indexed that it should greatly reduce the volume of work now thrown on judge advocates, and furnish a ready and very complete reference for officers of the Army handling administrative questions. The issue of a quarterly bulletin, giving the points decided in current decisions of the office, will operate to keep the service supplied with the decisions of the office and obviate the necessity in the future for such comprehensive revision of the digest as devolved upon the office during the current year.

It is hoped at an early date to take up the work of revision of the military titles of the Revised Statutes in the light of the administrative and judicial construction they have received and present them to Congress for enactment, following the plan pursued in respect of the judiciary titles of the Revised Statutes and the Articles of War. The effort will be made in this work to bring together related provisions, reconcile contradictions, and to incorporate such new matter as current administration suggests necessity for.

The following is a statement of courts-martial during the years 1910, 1911, and 1912; the figures speak for themselves:

General courts-martial.

	1910	1911	1912
Officers	30	42	29
Cadets	4	5	10
Enlisted men	5,127	3,756	4,343
General prisoners	45	48	53
Total	5,206	3,851	4,435

Summary courts.

1910	42,275
1911	33,082
1912	37,412

The comparatively small number of trials by courts-martial in 1911 is believed to be due to the fact that a great portion of the mobile Army was on duty along the southern frontier under field conditions.

The increase in the number of trials by summary court indicates that the summary court is resorted to in a great many instances where disciplinary measures in the hands of the organization commander could better have been employed.

General instructions have been sent to all division commanders to parole all prisoners whom they feel can be safely paroled, this with a view to saving the self-respect of the men confined, oftentimes for minor offenses, and also for the purpose of diminishing the amount of guard duty.

I am confident that once the proposed detention system is in force and an intelligent and humane policy—one whose object is the reformation of offenders and their return to the service as useful soldiers—is in full operation the number of men lost to the Army and discredited for life will be greatly reduced. Certainly, the present system of handling the deserter is far-reaching in its demoralizing and destructive effect upon all who come under its influence and no effort should be spared to supplant it by a system which gives to the youthful and ignorant offenders a chance to reform and become useful soldiers and citizens. The present system denies them this opportunity.

DESERTION.

There has been some increase in the number of desertions over last year.

Desertions for the fiscal year ending June 30, 1911	2,504
Desertions for the fiscal year ending June 30, 1912	3,401

It is always difficult to account for an increase or diminution in the number of desertions, as the volume fluctuates. It is probable that many young men enlisted last year with an expectation of field service, which was not gratified. Again, the demand for labor and the increase in wages have doubtless had some effect. The posts having the greatest percentage of desertions are mainly in the Northwest. The following are the first 10: Fort Stevens, Oreg.; Fort Lincoln, N. Dak.; Fort Missoula, Mont.; Fort Flagler, Wash.; Fort Ward, Wash.; Fort Robinson, Nebr.; Boise Barracks, Idaho; Fort Columbia, Wash.; Fort Rodman, Mass.; Fort W. H. Harrison, Mont.

While the department is determined to give the deserter when circumstances seem to indicate its desirability a chance to reform and

earn an honorable discharge, vigor in the pursuit of deserters has not been diminished.

The following table shows the percentages of desertions during the 10 years ending June 30, 1912:

1902	5.00	1908	4.59
1903	7.10	1909	4.97
1904	6.61	1910	3.66
1905	6.79	1911	2.28
1906	7.43	1912	2.98–3.00
1907	5.62		

INSPECTOR GENERAL'S DEPARTMENT.

The work of this department has been very efficiently performed during the year. The field inspections of troops, with a view to developing the state of their preparedness as a mobile force, were continued by the officers of the Inspector General's Department. These inspections developed the fact that there is a considerable variation in the state of instruction of the different units, and that the high standard which should be required of the Regular Army has not been generally attained. Some improvement of conditions over those of last year were developed, but the general results show that there is need for greater effort on the part of commanding officers to train and instruct their commands if all the troops of the mobile Army are to attain a proper standard of efficiency in practical fieldwork.

Reports received in consequence of War Department instructions of December 7, 1911, requiring that inspectors test mounted troops, both officers and men, over jumps of reasonable stiffness, including hurdles and other obstacles simulating those which would ordinarily be met with going across country, show an aroused interest and improvement in horsemanship in the Army and proficiency in real riding. The effects have been much more far-reaching than are apparent to the casual observer. Not only has the standard of horsemanship, and thereby the efficiency of the mounted service, been greatly improved, but there has been a physical awakening of the older officers of these services, which has been transmitted to the whole mounted service. Its results will render the older officers much more efficient in troop leadership. The activity of a regiment, whether mounted or dismounted, is measured by the activity of its leaders, and the improvement in the physical condition of the senior officers of the mounted service has resulted in a real awakening of these arms to the necessity for greater mobility and more thorough, constant, and systematic exercise as a preparation for fieldwork. There has been a corresponding improvement in habits, morals, and esprit. The older officers have come to realize that they must be so mounted and in such physical condition as to be able to actually lead their commands and set a vigorous example to their subordinates.

Under the directions of the Secretary of War, inspectors general, while conducting their regular post inspections, have made special inquiry as to whether post commanders are carrying out the instructions of May 27, 1911, as to the guarding and handling of prisoners. The reports of the inspectors show that these instructions were being carried out in a general way at all posts inspected since their receipt. At some posts the application has been made as broad as possible, and the results have been satisfactory both in the conduct of the men and the amount of work accomplished.

The discipline of the Army is generally reported as good.

QUARTERMASTER'S DEPARTMENT.

The general standard of efficiency of this department has been high. Improved methods of permanent construction of barracks and quarters have been adopted, and should result in very material saving, especially on all construction in the insular possessions and the Panama Canal Zone. Economies will also be effected through a more compact type of post construction, reducing greatly the amount of roads, walks, sewers, etc., at the same time meeting every reasonable demand as to light and air.

The transportation of troops from the United States to the Philippines has been efficiently performed and without serious accident of any kind.

The remount stations have resulted in a decided improvement in the quality of horses furnished the Army.

The maximum and minimum system of supply is being given thorough trial. Very considerable economies have been effected in the matter of clothing. The Quartermaster General states that it is impracticable to give the exact amount of savings that will result, but in general it may be stated that the savings will be approximately as follows:

Due to change in pattern of service blouse	$42,000
Due to issue of blankets on memorandum receipt	50,000
Due to issue of overcoats on memorandum receipt	80,000
Due to substitution of cotton drilling for trimming and lining	30,000
Due to reduction in number of collar ornaments on service blouse	20,000
Due to substitution of woolens for worsteds for the olive-drab woolen service uniform	164,000
Total	386,000

This represents the yearly savings, and will probably be further augmented by other economies in manufacture.

There is a very considerable complaint in the service about the excessive amount of paper work required by this department. This is a matter which is now being looked into, and every effort will be made to reduce this work to the lowest point consistent with proper accounting. There is every reason to believe that the combination of the three departments above referred to will result in a great reduction in the total paper work of the three separate departments.

A very careful series of experiments have been made looking to the adoption of a proper marching shoe. The experiments have been practical in character, and have involved a test of the new shoe by a battalion of troops making a long march under service conditions. It is believed that a proper shoe has at last been adopted, a shoe which will largely reduce one of the greatest factors in causing disability of the soldier, namely, sore feet from improper shoes.

A new tent has been adopted which will greatly reduce the number and weight of tent poles without reducing the tent space.

The question of replacing a portion of the present transportation by auto trucks is now being gone into very carefully, and it is probable that they will be adopted to a large extent for post work and for transportation purposes in those sections of the country where there are good roads.

I am of the opinion that the construction of barracks and quarters, roads, docks, etc., should be transferred to the Corps of Engineers; upkeep and repairs only to be done by the Quartermaster's Department.

The formation of the new Quartermaster Corps should result in a very great simplification of post administration, economy in office space, reduction in the number of returns, etc. A similar degree of simplification should result in the administration of regiments, districts, and territorial divisions, with a corresponding reduction in the clerical force.

The policy of establishing depots of supply has been continued throughout the year and such supplies as have been made possible by appropriations have been accumulated. It is believed that in each territorial division there should be supplies sufficient completely to equip the regular and militia organizations serving therein and also such volunteer organizations as it is contemplated to raise at once in case of a large mobilization incident to war with a first class power.

SUBSISTENCE DEPARTMENT.

This department has maintained a high standard of efficiency. Supplies have been of excellent quality and promptly furnished. The administration of the department has been excellent.

ORDNANCE DEPARTMENT.

The affairs of this department have been efficiently and ably conducted.

The accumulation of an adequate reserve of small arms and small-arms ammunition is being rapidly accomplished. A new automatic pistol has been adopted and is now being issued to the service. The weapon promises to give general satisfaction. The quality of the new infantry equipment is very satisfactory.

While the department stands ready to manufacture, or supervise the manufacture, of very much larger quantities of Seacoast Artillery ammunition, Field Artillery guns and ammunition, than is at present being manufactured, unfortunately the appropriations for this purpose are so limited that the accumulation of a proper reserve supply of Coast Artillery ammunition will be extended over a much longer period than the best interests of the country demand. The same may be stated with even greater force in regard to the manufacture of Field Artillery guns and ammunition. The shortage of these most essential military supplies is such as to constitute a positive danger to the country and to invite serious disaster in case of war. The fact does not seem to be appreciated by those charged with the responsibility of providing appropriations that materials of this character can not be manufactured in a hurry, that the manufacture of the present field gun and its ammunition requires time. War with a first-class power would find us in a most unfortunate condition so far as reserve supplies of these articles are concerned. The attention of Congress should be most earnestly invited to the necessity for larger appropriations for their manufacture.

MEDICAL DEPARTMENT.

In accordance with the recommendations of the Surgeon General, the number of Medical Reserve Corps officers on active duty has been gradually reduced, their places being taken by permanent appointments. The policy of the Surgeon General's Office is to give a short period of instruction to selected Medical Reserve Corps men, with a view to thoroughly familiarizing them with the methods of the Regular Army, in order that, in case of an emergency, there may be outside the regular corps a considerable number of officers who have served with troops for a long enough period to become thoroughly familiar with the duties of the regular medical officers.

The sanitary work of the officers of the corps has been of a high order, and the results of preventive medicine have been very gratifying. Typhoid inoculation has been successful beyond the hope of its most ardent advocates and has resulted in practically freeing the Army from typhoid.

The remarkable results attained by members of the corps in charge of sanitation on the Isthmus and of others serving with troops in Porto Rico and the Philippines are too well known to require mention. Their achievements have been of the greatest value and benefit to humanity and rendered possible work which could not otherwise have been accomplished without great loss of life, and have reduced sickness and loss of life in tropical countries to the minimum. There are few results in the history of our Army more gratifying than the work of the officers of the Medical Department in rendering the Tropics habitable for the white race.

The Surgeon General earnestly recommends an increase in the enlisted strength of the Hospital Corps. This subject is one which will receive careful consideration. It is believed that with the gradual concentration of troops the demands upon the Hospital Corps will be less severe than under the present system of small and scattered stations.

The health of the Army is very satisfactory. There has been a slight reduction in the noneffective rate.

With reference to venereal disease, the percentage continues to be unduly high. The Medical Department has made all possible effort to reduce the percentage of ineffectiveness resulting from this disease. A part of the recent increase is apparent rather than real, and is the result of a most careful and detailed inspection. Every practicable preventive measure is being employed, and efforts are being made to instruct young men as to the dangers resulting from immorality. I doubt, however, if we shall have any large measure of success in reducing the number of those affected with venereal disease (which is in no sense limited to the Army, but occupies an equally prominent position in diseases among civilians) until we, as a people, are willing to face the situation frankly and deal with it in a rational manner.

PAY DEPARTMENT.

The work of this department throughout the year has been satisfactory. The policy has been pursued of gradually reducing payments by paymasters in person at small posts, and funds have been

sent by registered mail or by express and payments made by officers of the garrison. This method of procedure is simple, and, as a rule, entirely satisfactory, and results in economy.

The consolidation of the Pay Corps with the Quartermaster's Department will probably result in still further simplifying the method of payments.

SIGNAL CORPS.

In addition to the work of the Signal Corps in Alaska, the insular possessions, and the United States, in connection with lines of information, great attention has been given to the training of field companies in the development of radiotelegraphy in the field and to its use with aeroplanes, and to military aeronautics.

In the recent maneuvers held in the vicinity of New York, the use of field radio stations and the system of lines of information provided by the field company of the Signal Corps, were of great value in maintaining communication between the larger units in tactical operations. The military aeroplanes of the Signal Corps in the maneuvers above referred to, rendered excellent service in reconnaissance, repeatedly uncovering the position of the enemy and reporting his location, composition and strength. In this work it was demonstrated that the aeroplane is an invaluable adjunct to an army in reconnaissance duty.

The aeroplane and the Cavalry working together—the aeroplane for extended and very rapid reconnaissance, the Cavalry for more detailed work in contact with the enemy—form a combination of the greatest value in reconnaissance, capable of producing results undreamed of a few years ago.

The aeronautical school was temporarily sent south last winter in order that the work might be kept up during the inclement season here. Instruction in aeronautics is progressing steadily. The policy of the War Department is to continue systematically the instruction of small classes, in order that we may accumulate gradually a considerable reserve of instructed officers.

A report on military aviation up to April 20, 1912, is contained in the report of the Secretary of War to Congress, and the record of aviation since that date is contained in the annual report of the Chief Signal Officer of the Army.

The telegraph lines in Alaska should not be continued under the Signal Corps longer than is absolutely necessary to effect their transfer to the Post Office Department. The duty is not a military one, but is almost wholly civil. The Army has conducted it for a number of years, pending the establishment of more stable conditions in Alaska. These conditions have now been established, and the Army should be relieved of the burden of this almost wholly civil work, which requires the service of a considerable number of officers and men of the Signal Corps who are needed elsewhere.

Increase in the Signal Corps.—Under date of March 14, 1912, the Secretary of War transmitted to Congress suggestions for a bill to provide military aviators for the Army, and for other purposes, a project to increase the commissioned strength of the Signal Corps. This bill represents the views of the department, and is appended hereto as Appendix H.

PORTO RICAN REGIMENT.

In my opinion this regiment should be made a three-battalion regiment, and maintained at a minimum strength of at least 100 men per company. Behind it should be a reserve sufficient to bring it up to the full statutory strength. The majors should, from now on, be selected from the captains of the regiment, with the further understanding that the general policy will be to appoint all field officers from the qualified officers of the regiment in regular order of promotion. It is believed that from the men who have passed through the regiment and are available in the population of Porto Rico at least two regiments of militia should be organized and officered. The colonel of the permanent regiment should also hold the position of brigadier general of the Porto Rico Militia. This arrangement could be accomplished with little expense, and would give us an efficient military organization for use in the island or elsewhere if required. A career must be opened to the captains of the present regiment; they can not be expected to remain contented in the grade of captains for the remainder of their official lives. Great care should be exercised in the appointment of officers, and the general policy above indicated should be carried out. If officers are not qualified for promotion they should be dropped, as in the regular service. It is believed that any future appointment to the command of this regiment should be made from the Infantry.

I am of the opinion that a battalion of mountain Artillery should be organized in Porto Rico.

DECENTRALIZATION.

This should be pushed forward far beyond the point which it has at present reached. I refer especially to the control and administration of military matters within division limits by the division commanders. The Philippines Division should be taken as a model. This is by far our most efficient administrative division, not by any inherent superiority on the part of the officers who have been assigned to it, but because its organization is on proper lines. The division commander is responsible for the administration of practically everything within the division limits. The work of the division has been satisfactorily performed, and comparatively few matters have to be referred to the War Department. This is as it should be in other divisions.

RIFLE SHOOTING IN THE PUBLIC SCHOOLS.

Measures, which it is trusted will be enacted into law, have been presented to Congress, providing for a certain amount of Government support of rifle shooting in the public schools. The use of the rifle is rapidly passing out of our population, and it is most important that our youth should be skilled in its use, as skilled use of the rifle is one of the most important features of a soldier's training, and in case of war the proper instruction of our troops would be greatly facilitated if recruits have been trained in the use of this arm. There are few ways in which better returns can be obtained for a moderate

expenditure of public funds than in encouraging the training of our youth in the use of the rifle.

CHANGES IN UNIFORM.

There has been considerable discussion concerning changes in uniform. This matter is very carefully covered in a memorandum hereto attached as Appendix I. It will be seen that the changes have not been nearly as numerous as commonly supposed, and that they have been in the direction of economy and reduction in the number of articles of the uniform. The figures given in this appendix as to cost, etc., have been arrived at after consultation with military tailors, and are believed to be approximately correct and to serve as an effectual answer to the charge of frequent and expensive changes in the uniform.

MISSISSIPPI RIVER FLOODS.

In the latter part of March, 1912, the rise in the Mississippi River reached an alarming point, and early in April extensive inundations took place. The flooded area covered about 15,000 square miles. The situation soon became so serious that the matter was taken up by the War Department. With the liberal appropriations provided by Congress, rations, medicine, and shelter were provided for the inhabitants of the flooded area, and forage was supplied for live stock. Maj. James E. Normoyle, Quartermaster's Department, was placed in general charge of the work, which he conducted with great ability and success. The number of people daily receiving rations amounted to about 185,000 for a considerable period of time. About 20,000 people were furnished shelter and 50,000 head of live stock provided with forage. Supplies were purchased in the open market or drawn from various depots and were issued through local citizens' committees familiar with conditions and needs. Every effort was made to limit issues to actual flood sufferers. Cooperating with or directly under Maj. Normoyle were officers of the Quartermaster's Department, officers and noncommissioned officers of the line, officers of the Corps of Engineers, Subsistence Department, a very considerable number of militia officers, and naval and revenue service officers. The total number of rations issued during the period was about 8,000,000. A very interesting report has been prepared by Maj. Normoyle, which sets forth in detail the work accomplished. Very valuable assistance was furnished by the Red Cross during the flood, and a considerable amount of supplies was issued through this organization. The great work of the society, however, began as the waters receded, and was incident to taking care of the sick, aiding in the reestablishment of families in their homes, supplying seeds, clothing, medicines, etc. The bulk of the relief work on the part of the Army ended in June, although some supplies are being issued in the lower river regions at the time of writing this report.

THE CANTEEN.

The great majority of the officers of the Army are of the opinion that the reestablishment of the canteen under proper supervision would tend to improve the health, discipline, and efficiency of the service, through diminishing intemperance and immorality. I concur in this opinion.

SERVICE OF TROOPS.

Throughout the year it has been necessary to maintain a relatively strong force on the southern frontier, especially of Cavalry, for the purpose of enforcing the neutrality laws. The troops engaged in this work have very efficiently discharged the duties imposed upon them, and the officers commanding the frontier departments have met the rather unusual conditions confronting them with uniformly good judgment.

It has also been necessary to maintain headquarters and two battalions of an Infantry regiment in China, with a view to securing railroad communications between Tientsin and Peking, under previous international agreement.

In the Philippines conditions of public order have not been such as to require the use of troops except in some minor expeditions against outlaws in the department of Mindanao.

Very respectfully,

LEONARD WOOD
Major General, Chief of Staff.

The SECRETARY OF WAR.

REPORT OF THE ADJUTANT GENERAL.

WAR DEPARTMENT,
THE ADJUTANT GENERAL'S OFFICE,
October 15, 1912.

To the honorable the SECRETARY OF WAR:

This report relates generally to the fiscal year ended June 30, 1912, but where extension beyond the fiscal year tends to continuity and completeness of data such extension has been made. The report relates to the organization and operations of the Army as shown by records transmitted to and filed in The Adjutant General's Office. It also relates to the business of that office as a bureau of the War Department.

The military statistics hereinafter presented relate to the Regular Army unless it is specifically indicated in the text that the Philippine Scouts are included.

AUTHORIZED STRENGTH OF THE ARMY.

The authorized strength of the entire military establishment on July 1, 1911, not including the Hospital Corps, was 4,817 officers and 76,954 enlisted men in the Regular Army and 180 officers and 5,732 enlisted men in the Philippine Scouts, a total of 4,997 officers and 82,686 enlisted men. The authorized strength on July 1, 1912, not including the Hospital Corps, was 4,812 officers and 81,409 enlisted men in the Regular Army and 180 officers and 5,732 enlisted men in the Philippine Scouts, a total of 4,992 officers and 87,141 enlisted men.

It will be seen from the foregoing statement that there was a net decrease of 5 officers and a net increase of 4,455 enlisted men in the authorized strength of the Regular Army, and that there was no change in the authorized strength of the Philippine Scouts.

The decrease in the number of officers of the Regular Army was the result of an increase of 12 officers in the Corps of Engineers under

the provisions of the act of Congress approved February 27, 1911 (36 Stat. L., 957); an increase of 8 in the number of additional officers under the provisions of the act of Congress approved March 3, 1911 (36 Stat. L., 1037); a decrease of 24 in the number of officers of the Medical Reserve Corps assigned to active duty under the provisions of the act of Congress approved April 23, 1908 (35 Stat. L., 66), and a decrease of 1 in the number of officers of The Adjutant General's Department under the provisions of the act of Congress approved April 23, 1904 (33 Stat. L., 262).

The increase of 4,455 in the authorized enlisted strength during the year was the result of the rearrangement and increase of that strength as published in General Orders, No. 138, War Department, October 9, 1911, and General Orders, No. 8, War Department, March 30, 1912, together with some minor changes made from time to time and announced in War Department general orders.

The authorized strength of the military establishment on June 30, 1912, by branches of service, is shown in the following table:

Branches of service.	Officers.	Enlisted men.	Total.
General officers	21	.....	21
Adjutant General's Department	23	.....	23
Inspector General's Department	17	.....	17
Judge Advocate General's Department	12	.....	12
Quartermaster's Department	126	200	326
Subsistence Department	44	203	247
Medical Department	619	.....	619
Pay Department	53	.....	53
Corps of Engineers	213	1,942	2,155
Ordnance Department	85	730	815
Signal Corps	46	1,212	1,258
Bureau of Insular Affairs	3	.....	3
Cavalry	830	13,823	14,653
Field Artillery	268	5,417	5,685
Coast Artillery Corps	762	18,471	19,233
Infantry	1,651	30,341	31,992
Porto Rico Regiment of Infantry	32	591	623
United States Military Academy detachments	7	501	508
Recruiting parties, recruit depots, and unassigned recruits	.....	7,000	7,000
United States Military Prison guards	.....	320	320
Service-school detachments	.....	583	583
Indian scouts	.....	75	75
Total Regular Army	4,812	81,409	86,221
Philippine Scouts	180	5,732	5,912
Aggregate	4,992	87,141	92,133

It is to be observed that the authorized enlisted strength hereinbefore shown does not include the Hospital Corps, which, under the act of Congress approved March 1, 1887 (24 Stat. L., 435), is not to be counted as a part of the enlisted strength of the Army. The authorized strength of the Hospital Corps is 3,500 men.

The authorized number of officers hereinbefore shown includes 114 first lieutenants of the Medical Reserve Corps assigned to active duty under the provisions of the act of Congress approved April 23, 1908 (35 Stat. L., 66).

ACTUAL STRENGTH OF THE ARMY.

The actual strength of the entire military establishment on June 30, 1912, was 4,470 officers and 77,835 enlisted men in the Regular Army and 180 officers and 5,480 enlisted men in the Philippine

Scouts, making a total of 4,650 officers and 83,315 enlisted men. The figures here given for the enlisted men of the Army do not include the strength of the Hospital Corps (Medical Department), which was 3,496 enlisted men.

On June 30, 1911, the actual strength of the entire military establishment, not including the Hospital Corps, was 4,281 officers and 70,001 enlisted men in the Regular Army, and 179 officers and 5,401 enlisted men in the Philippine Scouts, making a total of 4,460 officers and 75,402 enlisted men.

The following table shows the actual strength of the Army on June 30, 1912, by branches of service:

Branches of service.	Officers.	Enlisted men.	Total.
General officers	18	.....	18
Staff corps and departments	[1] 1,032	[2] 2,324	3,356
Engineers	188	1,822	2,010
Cavalry	747	13,645	14,392
Field Artillery	243	5,328	5,571
Coast Artillery Corps	702	17,957	18,659
Infantry	1,540	29,138	30,678
Miscellaneous	.....	7,621	7,621
Total Regular Army	[1] 4,470	[2] 77,835	82,305
Philippine Scouts	180	5,480	5,660
Aggregate	[1] 4,650	[2] 83,315	87,965

[1] Including 114 first lieutenants of the Medical Reserve Corps on active duty.
[2] Not including 3,496 enlisted men of the Hospital Corps.

COMPARISON OF AUTHORIZED AND ACTUAL STRENGTH.

The changes in the authorized and in the actual strength during the year June 30, 1911, to June 30, 1912, and a comparison of the number of vacancies on the later date, with the number of vacancies on the earlier date, can be shown most satisfactorily in tabular form. The table following shows the actual and the authorized strength of the military establishment on June 30, 1912, and June 30, 1911, not including the Hospital Corps, together with the increases and decreases during the year and the number of vacancies on each of those dates.

	Regular Army.			Philippine Scouts.			Total.		
	Officers.	Enlisted men.	Total.	Officers.	Enlisted men.	Total.	Officers.	Enlisted men.	Total.
Authorized strength:									
June 30, 1912	4,812	81,409	86,221	180	5,732	5,912	4,992	87,141	92,133
June 30, 1911	4,817	76,954	81,771	180	5,732	5,912	4,997	82,686	87,683
Increase during year	[1] 5	4,455	4,450	.....	.....	.....	[1] 5	4,455	4,450
Actual strength:									
June 30, 1912	4,470	77,835	82,305	180	5,480	5,660	4,650	83,315	87,965
June 30, 1911	4,281	70,001	74,282	179	5,401	5,580	4,460	75,402	79,862
Increase during year	189	7,834	8,023	1	79	80	190	7,913	8,103
Vacancies:									
June 30, 1912	342	3,574	3,916	.....	252	252	342	3,826	4,168
June 30, 1911	536	6,953	7,489	1	331	332	537	7,284	7,821

[1] Decrease.

It will be seen from the foregoing table that, while there was an increase in the authorized enlisted strength of the Army during the year ended June 30, 1912, there was a larger increase in the actual enlisted strength during that year. On June 30, 1912, there were 3,574 vacancies in the authorized enlisted strength of the Army, which included an allowance of 7,000 men for the enlisted personnel of the general recruiting service and for unassigned recruits. There were also 252 vacancies in the enlisted strength of the Philippine Scouts, making a total of 3,826 vacancies in the enlisted strength of the entire military establishment on June 30, 1912.

PHILIPPINE SCOUTS.

No change was made during the past fiscal year in the organization or the authorized strength of the Philippine Scouts. The total authorized strength of the Philippine Scouts is 180 officers and 5,732 enlisted men. They are organized into 12 battalions of 4 companies each and 4 independent companies, a total of 52 companies of enlisted natives of the Philippine Islands.

GEOGRAPHICAL DISTRIBUTION OF TROOPS.

The geographical distribution of the Army on June 30, 1912, is shown in the following table:

Geographical distribution.	Officers.	Enlisted men.	Total.
In the United States	3,507	60,580	64,087
In Alaska	58	1,223	1,281
In the Philippines:			
Regular Army	504	11,211	11,715
Philippine Scouts	180	5,480	5,660
In China	41	1,251	1,292
In Porto Rico	34	600	634
In Hawaii	193	3,846	4,039
In the Isthmian Canal Zone	51	790	841
Troops en route and officers at other foreign stations	82	1,830	1,912
Total	4,650	86,811	91,461

The foregoing table includes 3,496 enlisted men of the Hospital Corps, distributed as follows: United States, 2,503; Alaska, 49; Philippines, 745; Porto Rico, 20; Hawaii, 70; Isthmian Canal Zone, 20; China, 36; en route, 53. It also includes 114 first lieutenants of the Medical Reserve Corps on active duty.

GEOGRAPHICAL DIVISIONS AND DEPARTMENTS.

The only change made since the date of the last annual report in the geographical division of the country for purposes of military administration was the abolishment of the Department of the Visayas and the reorganization of the Philippines Division into two departments. This change was published in Paragraph III of General Orders, No. 19, War Department, June 24, 1912.

The present composition of the Philippines Division and its departments resultant from this change is as follows:

The Philippines Division.—Embracing the Department of Luzon and Department of Mindanao; headquarters at Manila, P. I.

The Department of Luzon.—Embracing all that portion of the Philippine Archipelago lying west of longitude 121° 45′ east of Greenwich and north of the parallel of latitude 11° 30′ north (excluding the

island of Linapacan), and lying east of longitude 121° 45′ east of Greenwich, and north of the ninth parallel of latitude, except the island of Mindanao, and all the islands east of the Straits of Surigao; headquarters at Manila, P. I.

The Department of Mindanao.—Embracing all islands of the Philippine Archipelago not included in the Department of Luzon; headquarters at Zamboanga, P. I.

CHANGES OF STATIONS OF TROOPS.

The tables following show the movement of troops to and from the insular possessions and Alaska, and changes of stations of troops within the continental limits of the United States during the fiscal year ended June 30, 1912:

Movements of troops on transports to and from the insular possessions and Alaska.

Transport.	Left—		Arrived at—		Troops on board.
	Place.	Date.	Place.	Date.	
		1911.		1911.	
Sherman	San Francisco, Cal.	July 5	Honolulu, Hawaii	July 13	Headquarters and Batteries D and E, First Field Artillery.
Buford	Manila, P. I.	July 17	San Francisco, Cal.	Aug. 15	Battery E, Second Field Artillery.
Sheridan	San Francisco, Cal.	Aug. 5	Manila, P. I.	Sept. 2	One hundred and forty-second Company, Coast Artillery Corps.
Logan	do	Sept. 5	Honolulu, Hawaii	Sept. 13	Third Battalion, Second Infantry.
Sheridan	Manila, P. I.	Sept. 15	San Francisco, Cal.	Oct. 15	One hundred and forty-sixth Company, Coast Artillery Corps.
Kilpatrick	Galveston, Tex.	Sept. 27	Colon, Panama	Oct. 4	Tenth Infantry.
Sherman	San Francisco, Cal.	Oct. 5	Manila, P. I.	Oct. 31	Thirteenth Infantry.
Sheridan	Honolulu, Hawaii	Oct. 7	San Francisco, Cal.	Oct. 15	Band and Second Battalion, Twentieth Infantry.
Thomas	San Francisco, Cal.	Nov. 6	Manila, P. I.	Dec. 3	Fifteenth Infantry.
				1912.	
Logan	do	Dec. 5	do	Jan. 5	Twenty-fourth Infantry.
Sherman	Manila, P. I.	Dec. 11	San Francisco, Cal.	Jan. 7	Seventh Infantry and Headquarters and First and Third Battalions, Twentieth Infantry.
		1912.			
Sheridan	San Francisco, Cal.	Jan. 5	Manila, P. I.	Feb. 4	Headquarters and Companies K and L, Third Battalion Engineers.
Logan	Manila, P. I.	Jan. 12	China	Jan. 18	First Battalion, Fifteenth Infantry.
Thomas	do	Jan. 15	Monterey, Cal.	Feb. 11	Twelfth Infantry.
Sherman	Monterey, Cal.	Feb. 6	Samar, P. I.	Mar. 4	Eighth Infantry.
Thomas	San Francisco, Cal.	Mar. 5	Honolulu, Hawaii	Mar. 12	Company I, Third Battalion Engineers.
Sheridan	Manila, P. I.	Mar. 8	San Francisco, Cal.	Apr. 7	Fourteenth Cavalry.
Warren	do	Mar. 9	China	Mar. 15	Headquarters and Third Battalion, Fifteenth Infantry.
Sherman	do	Mar. 15	San Francisco, Cal.	Apr. 14	Companies E and H, Second Battalion Engineers, and Third Infantry.
Do	Honolulu, Hawaii	Apr. 5	do	do	Headquarters and Company G, Second Battalion Engineers.
Thomas	Manila, P. I.	Apr. 15	Portland, Oreg.	May 13	Twenty-first Infantry.
Sherman	Portland, Oreg.	May 10	Honolulu, Hawaii	May 18	First Infantry.
Logan	Manila, P. I.	May 15	San Francisco, Cal.	June 9	Second Cavalry and Nineteenth Infantry.

Movements of troops on transports to and from the insular possessions and Alaska—Con.

Transport.	Left—		Arrived at—		Troops on board.
	Place.	Date.	Place.	Date.	
		1912.		1912.	
Sherman	Manila, P. I.	June 15	San Francisco, Cal.	July 11	Sixth Infantry and Headquarters and First and Second Battalions, Ninth Infantry.
Sheridan	Fort W. H. Seward, Alaska.	June 13	do	July 22	Headquarters and Companies F, G, H, and K, Sixteenth Infantry.
Do	Fort Liscum, Alaska.	June 16	do	do	Companies C and I, Sixteenth Infantry.
Do	Fort Davis, Alaska.	June 29	do	do	Companies B and E, Sixteenth Infantry.
Do	Fort St. Michael, Alaska.	June 30	do	do	Companies A, D, L, and M, Sixteenth Infantry.
Do	San Francisco, Cal.	June 1	Fort W. H. Seward, Alaska.	June 12	Headquarters and Third Battalion, Thirtieth Infantry.
Do	do	do	Fort Liscum, Alaska	June 15	Companies G and H, Thirtieth Infantry.
Do	do	do	Fort Davis, Alaska.	June 27	Companies E and F, Thirtieth Infantry.
Do	do	do	Fort St. Michael, Alaska.	June 30	Companies A, B, C, and D, Thirtieth Infantry.

Changes of stations of troops within the United States.

Organization.	Left—		Arrived at—	
	Place.	Date.	Place.	Date.
		1911.		1911.
Headquarters, First Cavalry.	Yosemite Park, Cal.	July 29	Presidio, San Francisco, Cal.	Aug. 12
One hundred and forty-second Company, Coast Artillery Corps.	Fort McHenry, Md.[1]	July 30	San Francisco, Cal.	Aug. 3
Companies I, K, L, and M, Second Infantry.	Fort D. A. Russell, Wyo.[2]	Sept. 1	do	Sept. 4
Troop M, First Cavalry	Fort Duchesne, Utah	Sept. 13	Boise Barracks, Idaho	Sept. 18
One hundred and thirty-fourth Company, Coast Artillery Corps.	Fort Michie, N. Y.	Sept. 26	Fort H. G. Wright, N. Y.	Sept. 26
Tenth Infantry	San Antonio, Tex.[3]	do	Galveston, Tex	Sept. 27
Thirteenth Infantry	Fort Leavenworth, Kans.[1]	Sept. 30	San Francisco, Cal.	Oct. 4
Band and Companies E, F, G, and H, Twentieth Infantry.	San Francisco, Cal.[4]	Oct. 15	Fort Douglas, Utah	Oct. 18
One hundred and forty-sixth Company, Coast Artillery Corps.	do.[5]	Oct. 16	Fort H. G. Wright, N. Y.	Oct. 22
Companies K and L, Thirtieth Infantry.	Presidio of Monterey, Cal.	Oct. 29	Presidio of San Francisco, Cal.	Nov. 5
Fifteenth Infantry	Fort Douglas, Utah[1]	Nov. 3	San Francisco, Cal.	Do.
Headquarters and Battery F, Fifth Field Artillery.	Fort Sheridan, Ill.	Nov. 15	Fort Sill, Okla.	Nov. 18
Battery E, Second Field Artillery.	Presidio, San Francisco, Cal.[5]	do	Vancouver Barracks, Wash.	Nov. 17
Battery E, Fifth Field Artillery.	Fort Leavenworth, Kans.	do	Fort Sill, Okla	Nov. 16
Headquarters and First and Third Battalions, Twenty-fourth Infantry.	Madison Barracks, N. Y.[1]	Nov. 28	San Francisco, Cal.	Dec. 3
Companies E, F, G, and H, Twenty-fourth Infantry.	Fort Ontario, N. Y.[1]	do	do	Dec. 4

[1] En route to Philippine Islands.
[2] En route to Hawaii.
[3] En route to Panama.
[4] En route from Hawaii.
[5] En route from Philippine Islands.

Changes of stations of troops within the United States—Continued.

Organization.	Left—		Arrived at—	
	Place.	Date.	Place.	Date.
Troops I and K, Twelfth Cavalry.	Fort Huachuca, Ariz.	1911. Dec. 14	Fort Meade, S. Dak.	1911. Dec. 18
Troops L and M, Twelfth Cavalry.	Fort Apache, Ariz.	Dec. 29	do.	1912. Jan. 6
Seventh Infantry.	San Francisco, Cal.[1]	1912. Jan. 8	Fort Leavenworth, Kans.	Jan. 15
Headquarters and First and Third Battalions, Twentieth Infantry.	do.[1]	do.	Fort Douglas, Utah.	Jan. 10
Headquarters and Second Battalion, Twenty-third Infantry.	Fort Bliss, Tex.	Jan. 22	Fort Benjamin Harrison, Ind.	Jan. 25
First Battalion, Twenty-third Infantry.	Fort McIntosh, Tex.	Jan. 23	do.	Jan. 26
Third Battalion, Twenty-third Infantry.	Fort Clark, Tex.	do.	do.	Jan. 27
Headquarters and First and Second Squadrons, Fourteenth Cavalry.	San Francisco, Cal.[1]	Apr. 8	Fort Clark, Tex.	Apr. 12
Third Squadron, Fourteenth Cavalry.	do.[1]	do.	Fort McIntosh, Tex.	Do.
Headquarters and Second and Third Battalions, Third Infantry.	do.[1]	Apr. 15	Madison Barracks, N. Y.	Apr. 22
First Battalion, Third Infantry.	do.[1]	do.	Fort Ontario, N. Y.	Do.
Twenty-first Infantry.	Portland, Oreg.[1]	May 13	Vancouver Barracks, Wash	May 13
Second Cavalry.	Oakland, Cal.[1]	June 10	Fort Blisss, Tex.	June 13
Headquarters and Third Battalion, Nineteenth Infantry.	San Francisco, Cal.[1]	June 12	Fort Meade, S. Dak.	June 15
First Battalion, Nineteenth Infantry.	do.[1]	do.	Fort Leavenworth, Kans.	June 14
Second Battalion, Nineteenth Infantry.	do.[1]	do.	Fort Sheridan, Ill.	June 17
Headquarters and First Squadron, Fourth Cavalry.	Fort Bliss, Tex.	June 15	Fort Huachuca, Ariz.	June 29
Third Band and Tenth, Thirteenth, Twenty-seventh, Twenty-ninth, Thirty-eighth, Fifty-seventh, Sixtieth, Sixty-fourth, Sixty-fifth, Sixty-seventh, One hundred and forty-seventh, and One hundred and fifty-eighth Companies, Coast Artillery Corps.	Presidio, San Francisco, Cal.	June 19	Fort Winfield Scott, Cal.	June 19
One hundred and forty-first Company, Coast Artillery Corps.	Fort McHenry, Md.	July 20	Fort Strong, Mass.	July 21

[1] En route from Philippine Islands.

The foregoing table does not show practice marches, temporary changes of station, or movements of troops along the Mexican border.

TROOPS SENT TO THE PHILIPPINES.

During the fiscal year 330 officers and 7,072 enlisted men were sent to the Philippines, making a total of 8,675 officers and 193,910 enlisted men, including volunteers, sent there since the commencement of the War with Spain. These numbers are far in excess of the actual number of individual officers and enlisted men that had Philippine service. Many men who served in the Philippine Islands in the Volunteer Army subsequently entered the Regular Army and again served there. In addition many officers and enlisted men of

the Regular Army have served two or more tours of duty in the Philippines. Each of these services is counted once in the numbers given above, and consequently many individuals are counted more than once in these numbers.

SECOND LIEUTENANTS APPOINTED.

During the year ended June 30, 1912, 277 second lieutenants were appointed to the Army. The following table shows the sources from which the appointments were made and the corps or arms of the service to which the appointees were assigned:

Source from which appointed.	Assigned to—					
	Engineers.	Cavalry.	Coast Artillery Corps.	Field Artillery.	Infantry.	Total.
United States Military Academy	5	18	17	6	36	82
Enlisted men, United States Army	.....	2	3	4	5	14
Civil life	1	31	68	15	66	181
Total	6	51	88	25	107	277

Of the 181 appointments shown in the preceding table as having been made from civil life, 29 were appointments of graduates of the United States Naval Academy. These appointees were assigned as follows: 1 to the Cavalry arm, 5 to the Field Artillery arm, 21 to the Coast Artillery Corps, and 2 to the Infantry arm. One of those appointed to the Infantry arm declined his commission.

Since June 30, 1912, the close of the fiscal year, 118 second lieutenants have been appointed in the Army. The following table shows the sources from which these appointments were made and the corps or arms of the service to which the appointees were assigned:

Source from which appointed.	Assigned to—					
	Engineers.	Cavalry.	Coast Artillery Corps.	Field Artillery.	Infantry.	Total.
United States Military Academy	6	21	19	7	42	95
Enlisted men, United States Army	.....	4	1	1	9	15
Civil life	.....	.....	6	.....	2	8
Total	6	25	26	8	53	118

Of the 8 appointments shown in the preceding table to have been made from civil life, 4 were appointments of graduates of the United States Naval Academy. All of these were assigned to the Coast Artillery Corps.

The appointments referred to in the preceding tables left 134 vacancies in the line of the Army—41 in the Cavalry, 11 in the Field Artillery, 23 in the Coast Artillery Corps, and 59 in the Infantry. These vacancies existed June 30, 1912, and are available at the date of this report for appointment of civilian candidates under the provisions of War Department General Orders, Nos. 53, 65, and 139, of 1911.

An examination of civilian candidates to determine their fitness for appointment as second lieutenants in the Corps of Engineers, Coast Artillery Corps, and in the mobile Army was held beginning September 3, 1912, and another examination of such candidates is to be held in January, 1913.

COMMISSIONED OFFICERS IN ACTIVE SERVICE.

On June 30, 1912, there were 4,470 commissioned officers on the active list of the Army. Of these 1,238 (including 65 chaplains) were general officers or officers of the staff corps and departments, 747 belonged to the Cavalry, 243 to the Field Artillery, 702 to the Coast Artillery Corps, and 1,540 to the Infantry.

Of the 1,238 general and staff officers, 1,113 were present for duty, 42 on leave, 11 absent sick, and 72, including officers detailed on the General Staff, on detached duty. Of the 3,232 line officers, 2,359 were present for duty, 35 absent sick, 146 on leave, 688 on detached duty, and 4 in arrest.

From the foregoing it appears that 27.01 per cent of the line officers and 10.10 per cent of the general and staff officers were absent from their commands. At the close of the preceding fiscal year 28.06 per cent of the line officers and 9.45 per cent of the general and staff officers were so absent.

In addition to the officers on the active list, there were 101 retired officers under assignment to active duty on June 30, 1912, as is more fully shown elsewhere in this report.

ADDITIONAL OFFICERS.

The Army appropriation act approved March 3, 1911 (36 Stat. L., 1058), authorizes the promotion up to and including the grade of colonel, in the discretion of the President and subject to examination as prescribed by law of line officers on the active list below the grade of colonel who have lost in lineal rank through the system of regimental promotion in force prior to October 1, 1890. It is provided that officers advanced to higher grades under the law before cited shall be "additional officers" in those grades.

At the close of the fiscal year there had been 57 advancements in grade (33 to the grade of colonel and 24 to that of lieutenant colonel) under the act of March 3, 1911, before cited. The following table shows the grades to which, and the arms of service in which, those advancements were made:

Arm of service.	From lieutenant colonel to colonel.	From major to lieutenant colonel.	Total.
Cavalry	10	13	23
Field Artillery	2		2
Coast Artillery Corps	6	2	8
Infantry	15	9	24
Total	33	24	57

Of the 57 advancements shown in the foregoing table, 4 were advancements in the cases of two officers who were advanced to the grade of lieutenant colonel and subsequently to that of colonel, 4 of the officers advanced were retired from active service prior to June 30, 1912, 1 died, and 1 was promoted lineally and ceased to be an additional officer, leaving 49 "additional officers" in service on June 30, 1912. Of these, 17 held commissions in the Cavalry arm, 2 in the Field Artillery arm, 7 in the Coast Artillery Corps, and 23 in the Infantry arm.

All of the officers who were entitled to advancement under the law before referred to had already reached the rank of major. The 24 majors advanced to be additional lieutenant colonels left a like number of vacancies in the grade of major, which caused the promotion to the next higher grade of the same number of captains, first lieutenants and second lieutenants. Of the 33 lieutenant colonels advanced to be additional colonels, 31 left vacancies in the grade of lieutenant colonel. These vacancies caused the promotion to the next higher grade of the same number of majors, captains, first lieutenants and second lieutenants. The 2 additional lieutenant colonels who were advanced to be additional colonels did not make any vacancies in the grade of lieutenant colonel.

OFFICERS ON DETACHED SERVICE.

As in preceding years, a relatively large number of officers were absent from their commands on detached service. On June 30, 1911, there were 6.35 per cent of the general officers and officers of the staff corps and departments and 22.23 per cent of the line officers on detached service. On June 30, 1912, those percentages were 5.82 for general and staff officers and 21.29 for officers of the line. Officers detailed on the General Staff are included in those percentages.

* * * * * * *

RETIRED OFFICERS ON ACTIVE DUTY.

On June 30, 1912, there were 101 retired officers under assignment to active duty. The following table shows the grades and employments of those officers:

Duty.	Lieutenant general.	Colonel.	Lieutenant colonel.	Major.	Captain.	First lieutenant.	Second lieutenant.	Chaplain.	Total.
At the Soldiers' Home	1			1	1				3
On recruiting service			2	7	17	6			32
With State militia		2	3	7	12	2			26
At educational institutions		1		8	15	7	2		33
At Army Service Schools, Fort Leavenworth, Kans			1						1
At Army War College		1							1
Military attachés		1		2					3
On special duty								1	1
In charge of Indian prisoners				1					1
Total	1	5	6	26	45	15	2	1	101

Of the retired officers on duty, as shown in the foregoing table, 1 lieutenant general, 1 major, and 1 captain (all at the United States Soldiers' Home in this city) were entitled to receive from the United States only the retired pay of their respective grades; 5 colonels and 6 lieutenant colonels were entitled to receive the pay and allowances

that a retired major would receive under a like assignment; and 25 majors, 44 captains, 15 first lieutenants, 2 second lieutenants, and 1 chaplain were entitled to the full active pay and allowances of their respective grades.

OFFICERS EXAMINED FOR PROMOTION.

During the fiscal year ended June 30, 1912, 233 officers were examined and 7 were reexamined for promotion under the provisions of the acts of Congress approved October 1, 1890 (26 Stat. L., 563), April 23, 1908 (35 Stat. L., 66), and March 3, 1909 (35 Stat. L., 737).

Of the 233 officers examined 228 were found qualified, 4 were found professionally disqualified, and 2 of these were suspended from promotion during the year 1912, 1 was suspended after the close of that year, and 1 was honorably discharged under the provisions of the act of April 23, 1908, before cited; and 1 was found physically disqualified and retired after the close of the fiscal year 1912.

Of the 8 officers noted in last annual report as examined in the fiscal year 1911 and found professionally disqualified, 6 were reexamined in 1912 and found qualified, 1 was found physically disqualified and retired, and the year of suspension of 1 did not begin until after the close of the fiscal year 1911. One officer examined in 1911 and found physically disqualified was reexamined after the close of the fiscal year 1912, found qualified, and promoted.

RETIRED OFFICERS.

On June 30, 1911, there were 1,007 commissioned officers on the retired list. During the fiscal year ended June 30, 1912, 63 officers were placed on the retired list, and 53 of those on that list died, leaving 1,017 officers of the Army on the retired list June 30, 1912. The following table shows the grades on the retired list and causes of retirement of those officers:

Grades.	By operation of law, 64 years of age (act of June 30, 1882).	After reaching 62 years of age (sec. 1244, R. S.).	On own application.		By direction of the President, having served over 20 years (act of July 5, 1884).	For disability.				After failure to pass second professional examination (act of Mar. 3, 1909).	Under special acts of Congress.	Total.
			After over 40 years' service (act of June 30, 1882).	After over 30 years' service (sec. 1243, R. S.).		In line of duty.			Not in line of duty (sec. 1252, R. S.).			
						Section 1251, Revised Statutes.	With increased rank (acts of Oct. 1, 1890, Apr. 23, 1908, and Mar. 3, 1909).	With full rank of command when wounded (act of July 28, 1866).				
Lieutenant general	3	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	5
Major general	16	.....	7	1	.....	.....	.....	1	.....	.....	.....	25
Brigadier general	85	12	90	26	.....	18	.....	3	.....	.....	2	236
Colonel	43	.....	24	38	.....	18	.....	2	.....	.....	.....	125
Lieutenant colonel	19	1	5	29	.....	21	17	.....	.....	.....	1	93
Major	13	.....	2	42	1	96	42	3	.....	3	1	203
Captain	7	.....	.....	14	.....	115	46	.....	3	.....	5	190
First lieutenant	1	.....	.....	.....	.....	66	22	.....	2	.....	1	92
Second lieutenant	.....	.....	.....	.....	.....	20	.....	.....	1	.....	1	22
Chaplain:												
Lieutenant colonel	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Major	5	.....	.....	.....	.....	11	.....	.....	.....	.....	.....	16
Captain	4	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	7
Total	199	13	130	150	1	368	127	9	6	3	11	1,017

Of the 9 officers who were retired under section 32 of the act of Congress approved July 28, 1866 (14 Stat. L., 337), on account of disability occasioned by wounds received in battle, with the full rank of the command held by them at the time such wounds were received, 3 were advanced three grades upon retirement, 3 two grades, and 3 one grade. All of them, with the exception of the major general and 1 brigadier general, received a further advancement of one grade under the act of Congress approved April 23, 1904 (33 Stat. L., 264). In addition to these, 89 brigadier generals, 19 colonels, 44 lieutenant colonels, 82 majors, 24 captains, and 4 first lieutenants hold their present grades on the retired list through an advancement of one grade under the act of Congress approved April 23, 1904, making a total of 269 officers on the retired list June 30, 1912, who have been advanced one grade under that act because of service during the Civil War.

The table following shows, by grades, the number of officers of the Army retired from active service during the fiscal year ended June 30, 1912, and the causes of their retirement.

Grades.	By operation of law, 64 years of age (act of June 30, 1882).	On own application.		For disability.			After failure to pass second professional examination (act Mar. 3, 1909).	Total.
		After over 40 years' service (act of June 30, 1882).	After over 30 years' service (sec. 1243, R. S.).	Incident to the service (sec. 1251, R. S.).	Preventing promotion (acts of Oct. 1, 1890, and Apr. 23, 1908).	Not incident to the service (sec. 1252, R. S.).		
Major general			1					1
Brigadier general	2		1					3
Colonel	8	8	11	3				30
Lieutenant colonel			3	2				5
Major	1		3	4			1	9
Captain				4		1		5
First lieutenant				3	2			5
Second lieutenant				1	3			4
Chaplain—Major				1				1
Total	11	8	19	18	5	1	1	63

From the foregoing table it will be seen that 63 officers of the Army were placed on the retired list during the fiscal year ended June 30, 1912. During the preceding year 64 officers were placed on that list.

Of the officers shown in the preceding table as having been retired during the year, 1 colonel was advanced one grade on the retired list, on account of Civil War service, under the provisions of the act of Congress approved April 23, 1904 (33 Stat. L., 264).

COMMISSIONED OFFICERS WHO HAD CIVIL WAR SERVICE.

The official records show that of the 4,470 commissioned officers on the active list of the Regular Army June 30, 1912, only two, Col. John L. Clem and Maj. Daniel W. Arnold, Quartermaster's Department, served in the Army, Navy, or Marine Corps during the Civil War, otherwise than as cadets, prior to April 9, 1865.

There were 1,017 officers of the Army on the retired list June 30, 1912. Of these 456 served in the Army, Navy, or Marine Corps otherwise than as cadets, prior to April 9, 1865. The following table shows, by grades, the number of officers on the retired list of the Army June 30, 1912, and the number of those officers that had Civil War service, otherwise than as cadets, prior to April 9, 1865:

Grades.	Officers on the retired list June 30, 1912.		
	Total.	Civil War service.	No Civil War service.
Lieutenant general	5	5	.....
Major general	25	23	2
Brigadier general	236	209	27
Colonel	125	29	96
Lieutenant colonel	93	49	44
Major	203	90	113
Captain	190	32	158
First lieutenant	92	6	86
Second lieutenant	22	.....	22
Chaplain:			
Lieutenant colonel	3	3	.....
Major	16	10	6
Captain	7	.....	7
Total	1,017	456	561

It will be seen from the foregoing table that nearly 45 per cent of the officers of the Army on the retired list June 30, 1912, served as officers or enlisted men of the Army, Navy, or Marine Corps during the Civil War. On October 15, 1911, over 47 per cent of the officers of the Army on that list had had Civil War service.

RETIRED ENLISTED MEN.

On July 1, 1911, there were 3,222 enlisted men on the retired list created by the provisions of the act of Congress approved February 14, 1885 (23 Stat. L., 305), modified by the acts of Congress approved September 30, 1890 (26 Stat. L., 504), and March 2, 1907 (34 Stat. L., 1218).

During the fiscal year, 345 enlisted men were placed on the retired list and 143 of the men on that list died, leaving 3,424 enlisted men on the retired list at the close of the year, June 30, 1912.

PERSONS QUALIFIED TO HOLD VOLUNTEER COMMISSIONS.

Certificates were issued during the past fiscal year, under the provisions of section 23 of the act of Congress approved January 21, 1903 (32 Stat. L., 779), in the cases of six persons who were found upon examination by boards of officers convened for that purpose to be "specially qualified to hold commissions in any volunteer force which may hereafter be called for and organized under the authority of Congress other than a force composed of Organized Militia." Of these 1 was from Massachusetts, 1 from Alabama, 1 from Texas, and 3 were noncommissioned officers of the Army.

From the date of the enactment of the law cited to June 30, 1912, only 68 certificates of qualification to hold commissions in the volunteer forces have been issued.

OFFICERS OF THE ARMY DETAILED AT CIVIL EDUCATIONAL INSTITUTIONS.

The laws authorizing the detail of officers of the Army to civil educational institutions as professors of military science and tactics, and the regulations for carrying those laws into effect, are published in General Orders, No. 231, War Department, November 16, 1909. Under those laws and regulations 88 officers (61 on the active list and 27 on the retired list) were under detail as professors of military science and tactics at civil educational institutions on June 30, 1911. During the fiscal year ended June 30, 1912, details of officers of the active list were withdrawn from seven such institutions, the vacancies being filled by the detail of retired officers, and one retired officer was relieved in June, 1912, and his successor, also a retired officer, was not designated until August, 1912. On June 30, 1912, there were 87 officers of the Army (54 of the active list and 33 of the retired list) on duty at institutions of this character.

Under the provisions of the War Department order before cited, the institutions, not exceeding 10 in any year, whose students have exhibited the greatest application and proficiency in military training and knowledge are to be designated as "distinguished institutions," and the President has authorized the announcement that an appointment as second lieutenant in the Regular Army will be awarded annually to an honor graduate of each of those institutions. The "distinguished institutions" for the past year were announced in Bulletin No. 8, War Department, June 14, 1912. They are as follows, the names of the institutions being arranged alphabetically:

Agricultural and Mechanical College of Texas, College Station, Tex.
Culver Military Academy, Culver, Ind.
New Mexico Military Institute, Roswell, N. Mex.
Norwich University, Northfield, Vt.
Pennsylvania Military College, Chester, Pa.
St. John's Military Academy, Delafield, Wis.
St. John's School, Manlius, N. Y.
Shuttuck School, Faribault, Minn.
The Citadel, Charleston, S. C.
Virginia Military Institute, Lexington, Va.

STRENGTH AND LOSSES OF THE ARMY.

* * * * * * *

The losses in the Army during the year ended June 30, 1912, are shown in the following statement:

REGULAR ARMY.

Officers:		
Killed in action or died of wounds, disease, etc.	19	
Resigned or discharged	36	
Dismissed	4	
Deserted	1	
Retired	63	
		123
Enlisted men:		
Killed in action or died of wounds, disease, etc.	361	
Discharged upon expiration of term of service	21,187	
Discharged for disability, by sentence of court-martial, or by order	7,131	
Deserted	3,411	
Retired	349	
		32,439
Total		32,562

Wounded, 2 officers and 9 enlisted men.

PHILIPPINE SCOUTS.

Officers:		
Resigned or discharged	13	
Dismissed	2	
		15
Enlisted men:		
Killed in action or died of wounds, disease, etc.	27	
Discharged upon expiration of term of service	884	
Discharged for disability, by sentence of court-martial, or by order	101	
Deserted	11	
		1,023
Total		1,038

Wounded, 17 enlisted men.

AGGREGATE.

Officers:		
Killed in action or died of wounds, disease, etc.	19	
Resigned or discharged	49	
Dismissed	6	
Deserted	1	
Retired	63	
		138
Enlisted men:		
Killed in action or died of wounds, disease, etc.	388	
Discharged upon expiration of term of service	22,071	
Discharged for disability, by sentence of court-martial, or by order	7,232	
Deserted	3,422	
Retired	349	
		33,462
Total		33,600

Wounded, 2 officers and 26 enlisted men.

It appears from the foregoing table that 21,187 enlisted men of the Regular Army were discharged upon expiration of term of service during the fiscal year ended June 30, 1912. During the preceding fiscal year the number of discharges upon expiration of term of service was 27,042 and during the fiscal year 1910 it was 11,911. These numbers are, respectively, 18.6, 24.6, and 12.6 per cent of the whole number of enlisted men in service or of enlistment contracts in force during each of those years.

The losses from all causes other than expiration of term of service among enlisted men of the Regular Army during the fiscal year ended June 30, 1912, numbered 11,252. During the preceding fiscal year those losses were 9,426 and during the fiscal year 1910 they were 11,777. Those numbers are, respectively, 9.9, 8.6, and 12.5 per cent of the whole number of enlisted men in service or of enlistment contracts in force during each of those years.

DESERTIONS.

As shown by the official returns, the number of desertions from the Army during the fiscal year ended June 30, 1912, aggregated 3,411, which is 3 per cent of the whole number of enlistment contracts in force during the year. While the desertion rate during that year is 0.72 per cent greater than the rate for the year 1911, it is nevertheless lower than it has been at any other time during the past 90 years, with the exception of the year 1898.

The number of desertions during the year 1912 is 907 greater than in 1911. This increase is partly due to the fact that during the year 1912 there was a much larger number of men serving in the first year of their enlistment contracts than during the preceding year, and it is a well-established fact that a larger number of desertions occur during the first year of enlistment than in any other year. In 1912 nearly 60 per cent of all the desertions occurred in the first year of enlistment.

The systematic and vigorous efforts, described in preceding reports, to apprehend deserters are still being made, and the comparatively small percentage of desertions that have occurred during this and the two preceding fiscal years is undoubtedly due to those efforts. That those efforts have been eminently successful in decreasing desertions is evidenced by the fact that during the three years (1906, 1907, and 1908) immediately preceding the adoption of the system of publishing and distributing circulars containing descriptions of deserters there were 15,285 desertions, while during the three years (1910, 1911, and 1912) following the establishment of the system there were but 9,379 desertions—a decrease of 5,906, or nearly 40 per cent. The average yearly percentage of desertions for the three years prior to the issuance of descriptive circulars is 5.88, while the average for the three years since the publication and distribution of the circulars is but 2.98—about half. The reason that the average yearly percentage for the three years 1910, 1911, and 1912 is but little more than half as large as the percentage for the three years prior to the adoption of the system while the aggregate number of desertions is considerably more than half is due to the fact that the average yearly number of enlistment contracts in force was more than 18,000 greater during the last three years. With almost twice as many deserters at large and amenable to arrest during the three years prior to the publication of the descriptive circulars there were 314 less returns to military control during that period than during the three years 1910, 1911, and 1912. In other words, the relative number of returns of deserters to military control had been nearly doubled.

Of the cases of reported desertion during the year, the charge was declared erroneous in 129, in 2 the men were tried and acquitted of the charge, and in 429 the men were tried and found guilty of the lesser offense of absence without leave, making a total of 560 cases improperly classed as desertions. If this number be deducted from the 3,411 desertions shown on the returns, there remain 2,851 cases, or 2.5 per cent, of actual desertions of enlisted men from the Army during the year. Because of the small changes that would result and because of the extended examinations of records that would be necessary to ascertain the branches of service and the posts to which the 560 men erroneously reported as deserters belonged and the periods during which their reported desertions occurred those cases have not been excluded in calculating the percentages shown in the tables in this report relative to desertions.

A comparison of the percentages of desertions in each of the past 20 years is presented in the following table:

Fiscal years.	Percentage deserted.	Fiscal years.	Percentage deserted.
1912	3.00	1902	5.00
1911	2.28	1901	4.12
1910	3.66	1900	4.09
1909	4.97	1899	3.22
1908	4.59	1898	1.57
1907	5.62	1897	3.13
1906	7.43	1896	4.03
1905	6.79	1895	3.42
1904	6.61	1894	3.15
1903	7.10	1893	4.85

The following table shows the percentages of the whole number of desertions occurring in each of the several specified periods of service during the last three years:

Period of service in which desertion took place.	Percentage of the whole number of desertions.		
	Year ended June 30, 1912.	Year ended June 30, 1911.	Year ended June 30, 1910.
First three months of service	15	13	7
Second three months of service	16	8	8
Third three months of service	16	7	17
Fourth three months of service	11	10	14
First year of service	58	38	46
Second year of service	13	20	29
Third year of service	3	14	7
First enlistment	74	72	82
Second enlistment	19	18	13
Third enlistment	4	6	3
Fourth enlistment and subsequent enlistments	3	4	2
Total	100	100	100

It will be seen from the foregoing table that there was a marked increase in the relative number of desertions during the first year of service, and a material decrease during the second and third years of service, the decrease being most marked in the percentage of desertions occurring during the third year of service.

The percentages of desertions by branches of the service during the fiscal years 1907–1912 are shown in the following table:

Branches of service.	Percentages.					
	1912.	1911.	1910.	1909.	1908.	1907.
Engineers	4.26	3.09	3.12	5.53	4.73	4.98
Field Artillery	4.07	2.93	4.72	7.03	5.74	5.97
Coast Artillery Corps	3.38	2.42	4.30	5.50	3.93	6.58
Hospital Corps	3.03	3.10	3.15	4.18	4.55	4.18
Cavalry	2.95	1.92	2.97	4.76	5.68	6.25
Infantry	2.37	1.85	2.99	4.26	3.90	4.62
All others, including unassigned recruits	3.32	2.85	5.21	5.48	5.42	7.19
The Army	3.00	2.28	3.66	4.97	4.59	5.62

The foregoing statement shows an increase in the percentage of desertions during the past fiscal year over the year 1911 in every branch of the service except the Hospital Corps.

As in the preceding reports, the percentages of desertions hereinbefore shown are based on the whole number of enlisted men who were in service at any time during the year and not on an average enlisted strength. All the losses during the year are included in the basic figures used, and those figures represent the whole number of enlisted men who might have become deserters or the whole number of enlistment contracts that might have been terminated by desertion at some time during the year. It is clearly improper to use as a basis for calculating the percentages of desertions a strength obtained by averaging the number of men in service at the end of each month of the year—a number that does not include the men who went out of service during the year, and even does not include the deserters themselves. If, however, the average enlisted strength is used as a basis it is found that the number of desertions from the enlisted force of the Army during the fiscal year ended June 30, 1912, was 4.43 per cent of the strength as against 3.49 per cent during the preceding fiscal year, 4.64 during the year 1910 and 6.70 per cent during the year 1909.

An examination of the returns for the fiscal year ended June 30, 1911, was made for the purpose of ascertaining what organizations serving within the continental limits of the United States had the lowest and highest relative number of desertions. It should be borne in mind that in the following paragraphs, showing the results of that examination, the organizations that served a part or the whole of the year in Hawaii, Alaska, and the Philippine Islands and the military posts in those localities are not taken into consideration, because in those regions it is unusually difficult for a deserter to make good his escape from military control, and consequently the number of desertions that occur there are so small as to be of no importance for the purposes of this report.

The regiments serving in the United States that had the lowest percentages of desertions during the year were the Tenth Cavalry and the Twenty-fifth Infantry, both colored organizations. The desertions from those regiments were 1.52 and 1.60 per cent of the whole number of enlisted men in service, or of enlistment contracts in force, in those regiments. The Tenth Cavalry was one of the two regiments having the lowest percentage of desertions during the years 1910 and 1911, the percentages for those years being 1.52 and 0.78 per cent, respectively. During the past fiscal year the Third Field Artillery had the lowest percentage of desertions of any regiment of that arm serving in the United States, the desertions from this regiment being 3.41 per cent of the whole number of enlisted men serving in the regiment during the year. The same regiment had the lowest percentage of desertions in that arm of the service in the United States during the fiscal years 1910 and 1911, the percentages being 4.66 and 2.18 respectively.

The regiments with the highest percentages of desertions were the Fourteenth Infantry, Twenty-third Infantry, First Cavalry, and Fifth Field Artillery. The desertions from those organizations were 7.63, 7.58, 6.78, and 6.21 per cent, respectively, of the whole number of enlistment contracts in force in each of them.

* * * * * * *

Of the white troops 3.07 per cent and of the colored troops 1.26 per cent were reported as deserters, as compared with 3 per cent for the whole Army. There was a decrease in the percentage of desertions among colored troops, as compared with the preceding year, of 0.08 per cent, while there was an increase among the white troops of 0.76 per cent.

The following table shows for each month of the fiscal years 1910, 1911, and 1912 the percentage of the total number of desertions occurring during each of those years:

Months.	Fiscal years.			Months.	Fiscal years.		
	1912.	1911.	1910.		1912.	1911.	1910.
July	8.65	9.11	11.90	February	5.63	5.27	4.90
August	8.68	9.18	12.10	March	6.89	8.51	7.26
September	8.09	8.31	9.84	April	10.82	11.38	9.78
October	7.27	6.95	9.52	May	12.87	12.86	9.58
November	6.16	5.47	6.79	June	14.65	12.14	7.92
December	5.83	5.51	5.72				
January	4.46	5.31	4.69	Total	100.00	100.00	100.00

That nationality is not an important factor in considering the subject of desertions from the Army was again emphasized by the fact that during the past fiscal year the ratio of foreign-born deserters to the whole number of deserters was approximately the same as the ratio of foreign-born men who have enlisted in the Army during the past three years to the total number of enlistments during that period. Of the men who deserted during the past fiscal year 87 per cent were of native birth, and approximately 88 per cent of the original enlistments made during the past three years were men of native birth.

Reports of return of deserters to military control during the fiscal year ended June 30, 1912, were received in 1,823 cases, not including 71 cases found not to be amenable to trial because of the statute of limitations. Of the 1,823 deserters returned to military control during the year 586, or 32.1 per cent, surrendered themselves and 1,237, or 67.9, were apprehended. Of the latter number, 528 were apprehended by the municipal police, 260 by sheriffs and other county officers, 158 by the military authorities, including those identified by finger-print records in the Adjutant General's Office, 156 by private detectives and detective agencies, 41 by United States marshals and deputy marshals, 29 by civilians (not civil officers), 27 by State detectives and other State officers, 19 by naval authorities, 9 by railroad police, 8 by officers in charge of penal institutions, and 2 by United States immigration officials. It will be seen that of the total number of deserters apprehended during the year 42.68 per cent were apprehended by the municipal police, 21.02 per cent by county officers, 12.77 per cent by the military authorities and 12.61 per cent by private detectives and detective agencies.

The disposition of the cases of the 1,823 men returned to military control during the year ended June 30, 1912, is shown in the following table:

Disposed of without trial:		
Charge removed as erroneous under paragraph 131, Army Regulations.	144	
Restored to duty	6	
Discharged without honor	25	
Escaped from confinement while awaiting trial	18	
Died	2	
		195

Tried by courts-martial:		
Acquitted	5	
Convicted of absence without leave, not sentenced to discharge	438	
Convicted of absence without leave; dishonorably discharged	57	
Convicted of absence without leave; sentenced to dishonorable discharge mitigated by reviewing authority	23	
Convicted of absence without leave; sentence of dishonorable discharge disapproved by reviewing authority	1	
Convicted of desertion: sentence of dishonorable discharge disapproved by reviewing au hority	7	
Convicted of desertion; sentence of dishonorable discharge mitigated by reviewing authority	24	
Convicted of desertion; not sentenced to discharge	12	
Convicted of desertion; dishonorably discharged and confined	972	
		1,539
Reports of results of trial not yet received		89
Total		1,823

It will be seen by the foregoing table that of the men tried by general courts-martial on the charge of desertion, 510 were retained in service and 1,029 were dishonorably discharged. The lengths of the sentences of confinement, as approved, in cases of men held to service are shown in the following table:

Less than one month	48
One to three months	218
Four to six months	168
Seven to twelve months	10
Total	444
No sentence of confinement	66
Total	510

The length of sentences of confinement, as approved, in cases of men dishonorably discharged are shown in the following table:

Less than three months	...	
Three to six months	115	
Six to twelve months	9	
Less than one year		124
One year		269
One year and a half		324
Two years		185
Two years and a half		63
Three years		31
Three years and a half		6
Four years and over		14
Total		1,016
No sentence of confinement		13
Aggregate		1,029

Of the 510 cases in which the deserters were tried and retained in service, 126, or 24.7 per cent, have already deserted since their trials; 18 have been dishonorably discharged, and 6 have been discharged without honor, making a total of 150, or 29.4 per cent of the whole number, who have already deserted again, or have had their services terminated other than honorably, during the short time that has elapsed since their trials.

DISCHARGES OF ENLISTED MEN ORDERED BY THE WAR DEPARTMENT.

The following table shows the number of discharges of enlisted men ordered by the War Department during the fiscal year ended June 30, 1912, with the reasons for discharge:

On account of fraudulent enlistment	164
On account of desertion	26
On account of imprisonment under sentence of civil court	90
On account of having become disqualified for service through own misconduct	65
On account of being unsuited to the service	1
On account of services being no longer necessary	1
In the interest of the United States	14
To enter the Soldiers' Home	7
By purchase, under General Orders, No. 13, War Department, 1909, and General Orders, No. 90, War Department, 1911	662
Under paragraph 9, General Orders, No. 13, War Department, 1909, and paragraph 9, General Orders, No. 90, War Department, 1911	43
For other reasons, under clause (e), section 2, paragraph 149, Army Regulations	10
On certificate of disability after admission to the Government Hospital for the Insane	50
Total	1,133

DISCHARGES ON SURGEON'S CERTIFICATE OF DISABILITY.

The method set forth in General Orders, No. 174, War Department, August 12, 1909, of discharging enlisted men for disability was continued during the fiscal year covered by this report. During that year 1,044 enlisted men were recommended by post surgeons for discharge on surgeon's certificate of disability and were ordered before boards of medical officers convened under the provisions of the order before cited. Discharges were ordered on the certificates prepared by post surgeons in 854 of these cases, and on new certificates prepared by the boards in 138 cases. In 52 cases the soldiers were retained in service, the disability having been found insufficient to require discharge from service on that account.

As was stated in the last preceding annual report, the chief beneficial effect of this method of discharging men on surgeon's certificate of disability lies in the fact that post surgeons, knowing that their certificates of disability will be reviewed by boards of expert medical examiners, who will also reexamine the soldiers to whom the certificates relate, exercise much greater care in recommending the discharge of men for disability than they formerly did when no effective review of their work was possible.

It appears from the official returns that 1,046 enlisted men of the Regular Army, including the 50 enlisted men discharged after admission to the Government Hospital for the Insane, were discharged on surgeon's certificate of disability during the fiscal year ended June 30, 1912. The difference between the number of discharges (992) on surgeon's certificate of disability after examination by boards of medical officers and the whole number of discharges (1,046) on surgeon's certificate of disability, shown by the returns to have been made during the fiscal year ended June 30, 1912, is accounted for by the fact that some of the men who were discharged after admission to the Government Hospital for the Insane were not ordered before boards of medical officers convened under General Orders, No. 174, of 1909, and to the further fact that in some of the cases of men examined by boards of medical officers the discharges were ordered so

near to the close of the fiscal year that the discharges were not carried into effect until after June 30, 1912.

The number of discharges on surgeon's certificate of disability (1,046) was greater than the number (780) during the preceding year, but it was less than the number (1,053) during the fiscal year 1910, and that (1,263) during the fiscal year 1909.

An examination of the records has been made with a view to ascertain how many discharges on surgeon's certificate of disability were made because of disabilities that existed prior to enlistment. From that examination it appears that 523 of the 1,046 discharges on surgeon's certificate of disability during the past fiscal year were based on disabilities that existed prior to enlistment. Of the 780 enlisted men discharged on surgeon's certificate of disability during the preceding fiscal year, 255 were discharged because of disabilities that existed prior to enlistment. During the fiscal year 1910, out of a total of 1,053 discharges of this class, 318 were discharged for disabilities that existed prior to enlistment.

DISCHARGES BY PURCHASE.

Section 4 of the act of Congress approved June 16, 1896 (26 Stat. L., 158), authorizes the President, in time of peace and "under such rules and upon such conditions as he shall prescribe," to permit any enlisted man to purchase his discharge from the Army. The regulations under which discharges by purchase can be obtained by enlisted men are fully set forth in General Orders, No. 90, War Department, June 30, 1911.

In addition to the 662 discharges by purchase ordered by the War Department, as shown in the preceding section of this report, 1,813 discharges were ordered by commanding generals of military divisions and departments under the provisions of the general orders before cited, making a total of 2,475 discharges by purchase during the fiscal year ended June 30, 1912. The following table shows the number of applications for discharge by purchase during the fiscal year, the number acted on by the commanding generals of the several military divisions and departments, the number transmitted to the War Department for action, and the disposition that was made of the applications:

Divisions and departments.	Number of applications for discharge by purchase.	Discharges ordered.	Applications disapproved.
Eastern Division	757	747	10
Central Division	656	656	.....
Western Division	381	345	36
Philippines Division	25	23	2
Department of the Gulf	8	7	1
Department of the Lakes	3	3	.....
Department of Texas	9	9	.....
Department of California	14	13	1
Department of the Columbia	6	6	.....
Department of Luzon	4	4	.....
Total	1,863	1,813	50
Applications transmitted to the War Department	671	662	9
Aggregate	2,534	2,475	59

The number of discharges by purchase (2,475) during the fiscal year ended June 30, 1912, was larger than the number (2,160) similarly discharged during the preceding fiscal year. During the fiscal year ended June 30, 1910, they numbered 2,999.

THE ADJUTANT GENERAL'S DEPARTMENT.

On June 30, 1911, there were 24 officers in The Adjutant General's Department. Since that date 2 officers having permanent commissions in the department have been retired from active service, 9 officers have been detailed to the department from the line of the Army, and 8 relieved from detail, leaving a total of 23 officers in the department at date of this report, of whom 18 are serving with various military commands, and 5 are on duty in The Adjutant General's Office.

The office of Adjutant General with the rank of major general having been vacated through the retirement on February 16, 1912, of Maj. Gen. Fred C. Ainsworth, the personnel of the department became reduced by operation of law to 23 officers.

Brig. Gen. William P. Hall succeeded to the office of The Adjutant General and was retired June 11, 1912, by operation of law.

Col. H. P. McCain, adjutant general, was relieved on August 14, 1912, from the charge of The Adjutant General's Office by the present incumbent, who was regularly appointed to the office of The Adjutant General on August 24, 1912.

THE MILITARY ACADEMY.

On August 31, 1912, there were under assignment to duty at the United States Military Academy 126 commissioned officers (including 7 professors, 2 acting professors, and 1 associate professor), 1 librarian, 1 master of the sword, 1 chaplain, 1 teacher of music, 4 civilian instructors in languages, and 3 civilians employed as instructors in fencing, broadsword exercise, and military gymnastics, a total of 137. This is an increase of 12 since August 31, 1911, the date of the superintendent's report for that year.

On September 1, 1911, there were 575 cadets on the rolls, including 4 foreign cadets, 2 of whom were from Cuba, 1 from Costa Rica, and 1 from Ecuador. Between September 1, 1911, and September 1, 1912, 49 cadets were discharged for deficiency in studies or in conduct, 6 were dismissed by sentence of court-martial, 12 resigned, 2 foreign cadets were dropped from the rolls, and 96, including 1 foreign cadet from Costa Rica, were graduated. In June, 1912, 120 cadets were admitted, including 1 foreign cadet from Nicaragua. On August 1, 1912, 13 cadets were admitted; 15 ex-cadets were admitted August 28, 1912, without mental reexamination.

On September 1, 1912, there were 558 cadets on the rolls, including 2 foreign cadets, 1 of whom was from Cuba and 1 from Nicaragua. Those cadets were divided among the four classes as follows: First class, 98; second class, 113; third class, 194; fourth class, 153.

The usual examination of candidates for admission to the Military Academy was held at various military posts in April, 1912. An additional examination was held July 1, 1912, with a view to fill the 92 vacancies that existed after the April examination. Including prin-

cipals and alternates, 532 candidates were designated for these examinations. Of that number, 122 failed to report, 1 was unable to report because of sickness, 2 reported but did not take the examination, 16 failed to complete the examination, and 228 were rejected upon mental or physical examination or upon both. There were no vacancies for 28 alternates who qualified. The remaining 135 candidates were found qualified, and 133 of them were admitted to the academy in June and August, 1912. Two of the candidates found qualified did not report for admission to the academy.

Information concerning the operation of the several academic departments, the rebuilding and enlarging of the Military Academy, the discipline of the Corps of Cadets, and other matters of interest are to be found in the Annual Report of the Superintendent of the Military Academy. As it is customary to print that report with the other reports of the War Department, further reference to those subjects is omitted from this report.

RECRUITING FOR THE ARMY.

With the exception of brief suspensions of active recruiting for one arm or another of the line of the Army when the enlisted strength of that particular arm had reached approximately the authorized strength, the officers on general recruiting service continued their activities in obtaining recruits during the entire year.

At the beginning of the fiscal year 1912 there were 135 officers on the general recruiting detail, and at the end of that year there were 144. The latter number includes 32 retired officers detailed under the provisions of the act of Congress approved April 23, 1904 (33 Stat. L., 264), an increase of 12 over the number detailed last year; 75 officers regularly on duty at depots, 2 of whom were relieved from that duty on July 1, 1912, and 5 officers temporarily at the depots preliminary to entrance on recruiting duty at recruiting stations early in July, 1912.

On June 30, 1911, there were 138 central recruiting stations and on June 30, 1912, there were 144. Of this latter number 59 were main stations, each of which was in charge of a recruiting officer; the remainder were auxiliary stations. In the New York City recruiting district there were 4 officers in charge of stations under the supervision of the recruiting officer in charge of the district. In the Boston, Mass., recruiting district there was one officer on temporary duty as assistant to the officer in charge of the district. In addition to the main and central auxiliary stations, temporary stations were opened from time to time for the purpose of canvassing the territory of the recruiting districts.

The smallest number of cities and towns canvassed by officers of the general recruiting detail in any one month was 243; the largest number canvassed in any one month was 268. During the preceding year those figures were 151 and 287, respectively.

The table following shows the number of applicants accepted for the Army and the number of applicants rejected at general recruiting stations, including those at auxiliary stations, during the fiscal year ended June 30, 1912.

Recruiting districts.	Number of applicants accepted.	Number of applicants rejected.	Total number of applicants.	Applicants accepted at stations and subsequently rejected at depots and depot posts.
Albany, N. Y	296	1,437	1,733	23
Atlanta, Ga	293	1,025	1,318	26
Baltimore, Md	503	2,040	2,543	67
Boston, Mass	552	2,481	3,033	37
Buffalo, N. Y	503	2,393	2,896	37
Charlotte, N. C	707	2,087	2,794	71
Chicago, Ill.:				
601 West Madison Street	1,253	6,843	8,096	160
505 South State Street	1,834	6,367	8,201	227
905 South State Street	1,117	2,049	3,166	143
Cincinnati, Ohio	885	1,742	2,627	93
Cleveland, Ohio	295	1,338	1,633	23
Columbus, Ohio	306	858	1,164	30
Dallas, Tex	363	1,534	1,897	50
Denver, Colo	669	2,184	2,853	88
Detroit, Mich	1,177	6,553	7,730	219
Duluth, Minn	217	939	1,156	46
El Paso, Tex	201	389	590	12
Evansville, Ind	751	1,146	1,897	82
Grand Rapids, Mich	252	812	1,064	27
Harrisburg, Pa	440	509	949	50
Helena, Mont.[1]	40	78	118	3
Huntington, W. Va	541	1,870	2,411	50
Indianapolis, Ind	1,086	2,054	3,140	124
Joplin, Mo	482	2,657	3,139	76
Kansas City, Mo	772	1,056	1,828	64
Knoxville, Tenn	987	2,438	3,425	83
Lexington, Ky	496	1,331	1,827	43
Little Rock, Ark	460	958	1,418	32
Los Angeles, Cal	283	459	742	23
Louisville, Ky	745	1,741	2,486	67
Memphis, Tenn	348	1,508	1,856	22
Nashville, Tenn.[2]	96	173	269	15
Newark, N. J	343	1,706	2,049	53
New Haven, Conn	366	1,218	1,584	42
New Orleans, La	256	455	711	35
New York, N. Y	4,073	14,310	18,383	526
Oklahoma, Okla	524	1,899	2,423	78
Omaha, Nebr	484	634	1,118	63
Parkersburg, W. Va	286	656	942	24
Philadelphia, Pa	838	1,961	2,799	94
Pittsburgh, Pa	630	2,087	2,717	68
Portland, Me	271	1,731	2,002	38
Portland, Oreg	340	709	1,049	25
Providence, R. I	490	1,308	1,798	61
Richmond, Va	266	713	979	25
Roanoke, Va	367	569	936	27
St. Louis, Mo	1,403	7,278	8,681	192
St. Paul, Minn	355	837	1,192	62
Salt Lake City, Utah	335	581	916	56
San Francisco, Cal	1,835	4,257	6,092	258
Savannah, Ga	330	1,555	1,885	17
Scranton, Pa	341	1,180	1,521	28
Seattle, Wash	337	584	921	23
Spokane, Wash.[3]	81	201	282	7
Springfield, Ill	409	854	1,263	46
Springfield, Mass	242	855	1,097	24
Syracuse, N. Y	355	853	1,208	47
Terre Haute, Ind	672	1,570	2,242	122
Toledo, Ohio	322	1,516	1,838	27
Wichita, Kans	336	730	1,066	69
Total	35,837	113,856	149,693	4,250

[1] Closed Nov. 19, 1911. [2] Reopened Apr. 1, 1912. [3] Reopened Nov. 29, 1911.

It will be seen from the foregoing table that 76 per cent of the applicants for enlistment at recruiting stations were rejected at those stations, the same percentage as was reported for the preceding fiscal year.

As in preceding years, applicants for enlistment accepted at recruiting stations were sent to recruit depots and depot posts for physical examination and for enlistment if found qualified. However, between June 26 and 30, 1912, a few applicants for enlistment for the line of the Army were accepted and enlisted at general recruiting stations under special instructions from the War Department, because of lack of funds for their transportation to depots before the close of the fiscal year.

The following table shows the number of enlistments (including reenlistments) for the Army and the number of applicants rejected at the recruit depots, depot posts, and other military posts, and in the field during the fiscal year ended June 30, 1912:

Station or post.	Number enlisted.	Number rejected.	Total number enlisted and rejected.
General recruiting stations	[1] 136	.....	[1] 136
Recruit depots:			
Columbus Barracks, Ohio	8,385	1,039	9,424
Jefferson Barracks, Mo	7,502	1,176	8,678
Fort Logan, Colo	2,411	421	2,832
Fort McDowell, Cal	1,665	296	1,961
Fort Slocum, N. Y	8,274	1,132	9,406
Total	28,237	4,064	32,301
Depot posts:			
Fort Bliss, Tex	39	.....	39
Fort Douglas, Utah	168	1	169
Fort George Wright, Wash	127	.....	127
Jackson Barracks, La	234	29	263
Fort Lawton, Wash	333	21	354
Fort Sam Houston, Tex	322	12	334
Fort Snelling, Minn	473	115	588
Vancouver Barracks, Wash	536	38	574
Fort William Henry Harrison, Mont	27	.....	27
Total	2,259	216	2,475
Military posts (other than depot posts)	5,802	268	6,070
In the field	2,143	9	2,152
Porto Rico Regiment of Infantry	393	83	476
Aggregate	38,970	4,640	43,610

[1] Of the 136 enlistments at general recruiting stations, 94 were of former soldiers enlisted for duty with recruiting parties in the districts in which they were enlisted. The remaining 42 enlistments were made for various arms of the service between June 26 and June 30, under special instructions from the War Department.

The foregoing table does not include 1,087 enlistments and 364 rejections for the Philippine Scouts. If these are included the enlistments number 40,057 and the rejections 118,860, including 113,856 rejections at the general recruiting stations, a total of 158,917 enlistments and rejections during the fiscal year ended June 30, 1912, for the entire military establishment.

Of the applications rejected during the fiscal year ended June 30, 1912, 7,128 were rejected because the applicants were aliens, 3,524 because they were illiterates, and 2,066 because of restrictions on recruiting for particular arms of the service during brief periods of the year.

It was the practice to assign recruits to organizations of the line of the Army in the United States on the basis of the vacancies shown

by the regular monthly returns of the organizations, or by special reports of strength received from the organization commanders. To provide for the filling of vacancies in organizations serving in the Philippines, a cable report showing the number of men returned to the United States for discharge was made by the commanding general of the Philippines Division each month at the time of the sailing of the transport for the United States (about the 15th of the month). Measures were then taken by this office to send a corresponding number of recruits, if available, on the transport sailing for the Philippines on or about the 5th of the following month. The recruits, on their arrival in the Philippines, were assigned to organizations by the commanding general of the division. In assigning recruits the movement of every detachment of recruits was considered by itself with a view to the greatest possible economy of transportation. Whenever possible organizations were supplied with recruits from the nearest depot, but when a large number of recruits was needed at once at a particular point it was sometimes necessary to draw upon more than one depot to make up the required number. Also when a particular depot became overcrowded, and there were no vacancies in near-by organizations, it was sometimes necessary to send recruits to more distant points. But such movements were never ordered except in case of necessity.

Under date of April 1, 1912, the Secretary of War adopted a plan of furnishing recruits at regular half-yearly intervals, determined in advance for each regiment and separate organization, and naming the depots or depot posts from which the recruits for each organization should be drafted. This plan authorizes the filling of an organization to the statutory maximum strength, or, if the authorized strength is below the statutory maximum, then to give about 8 per cent excess strength in order to fill estimated vacancies and allowing other vacancies to accumulate thereafter for six months before assigning more recruits to that organization, the regiments and other organizations of the Army being filled in turn as they are reached on the fixed schedule. This method of sending recruits to regiments has been in full operation, except for troops in the Philippine Islands and for colored regiments in the United States, since April 13, 1912, when the first draft was ordered, and satisfactory results are anticipated because the period to be devoted to recruit instruction can be provided for in advance by each organization and limited to two definite periods annually, during which the entire quota of recruits for the ensuing six months is prepared at one time for duty in the ranks. These periods are reduced by 36 days' systematic drill and instruction of the recruits at depots before they are drafted to regiments. The authorized strength of regiments in the Philippines having been established at the statutory maximum, it was found that the periodical assignment of recruits would result in the organizations falling below the desired strength. To avoid this, a sufficient number of unassigned recruits is forwarded monthly to fill the vacancies reported by cable by the division commander on the 15th of each month, and in addition to this, whenever practicable, unassigned recruits in excess of the reported number of vacancies, not exceeding, however, in any case 4 per cent of the authorized strength of the respective arms of service in the Philippine Islands.

The total number of original enlistments and reenlistments for the Army, including the Hospital Corps and Philippine Scouts, during the fiscal year ended June 30, 1912, was 40,057. Of these, 37,382 were enlisted or reenlisted for the line of the Army, 1,588 (including 899 for the Hospital Corps) for the staff departments and 1,087 for the Philippine Scouts.

The original enlistments numbered 26,726, of which 25,781 were for the line of the Army, 481 (including 290 for the Hospital Corps) for the staff departments, and 464 for the Philippine Scouts. The reenlistments numbered 13,331, of which 11,601 were for the line of the Army, 1,107 (including 609 for the Hospital Corps) for the staff departments and 623 for the Philippine Scouts.

The following table shows the race and nativity of the men enlisted and reenlisted for the Army during the fiscal year ended June 30, 1912:

Race and nativity.	Regular Army				Philippine Scouts.	Aggregate.
	Line of Army.	Staff departments not including Hospital Corps.	Hospital Corps.	Total.		
Native white:						
Enlistments	20,867	180	247	21,294	.....	21,294
Reenlistments	8,846	362	449	9,657	.....	9,657
Total	29,713	542	696	30,951	.....	30,951
Foreign white:						
Enlistments	2,807	11	37	2,855	.....	2,855
Reenlistments	1,826	131	107	2,064	.....	2,064
Total	4,633	142	144	4,919	.....	4,919
Colored:						
Enlistments	1,963	.....	6	1,969	.....	1,969
Reenlistments	649	4	50	703	.....	703
Total	2,612	4	56	2,672	.....	2,672
Indians:						
Enlistments	9	.....	.....	9	.....	9
Reenlistments	9	.....	.....	9	.....	9
Total	18	.....	.....	18	.....	18
Porto Ricans:						
Enlistments	134	.....	.....	134	.....	134
Reenlistments	266	1	3	270	.....	270
Total	400	1	3	404	.....	404
Filipinos:						
Enlistments	[1] 1	.....	.....	1	464	465
Reenlistments	[1] 5	.....	.....	5	623	628
Total	6	.....	.....	6	1,087	1,093
Total enlistments	25,781	191	290	26,262	464	26,726
Total reenlistments	11,601	498	609	12,708	623	13,331
Aggregate	37,382	689	899	38,970	1,087	40,057

[1] Band musicians.

Eighty-eight per cent of the original enlistments of white soldiers during the fiscal year ended June 30, 1912, were enlistments of men born in the United States. During the preceding fiscal year that percentage was 89, and during the fiscal year 1910 it was 88.

* * * * * * * *

The reports of recruiting officers showing whether or not the applications for enlistment received by them were the result, wholly or in part, of any form of advertising, and if so, of what form, were continued during the year with a view to keep the War Department informed as to the efficacy of each of the various methods of advertising for recruits. The following table shows the number of applications reported to have been the result of each of the several methods of advertising during the fiscal year ended June 30, 1912:

Methods of advertising.	Number of applications.
Sight of recruiting flag and station	66,164
Recruiting poster	28,176
Newspaper advertisement	16,428
Recruiting circular	9,346
In parks and squares (in 16 districts during July and in 17 districts from August to June)	9,247
Canvass by recruiting parties	4,572
Handbills	3,571
Special circulars and handbills issued by recruiting officers (in 2 districts during July, August, September, May, and June; in 3 districts during October and April; in 4 districts during November, February, and March; in 5 districts during December; and in 6 districts during January)	3,313
Advertising cards	960
Personal letters from recruiting officers (in 2 districts during July, September, and June; in 3 districts during August; in 4 districts during May; in 5 districts during October and January; in 6 districts during December and March; in 7 districts during February and April; and in 8 districts during November)	625
Night electrical recruiting sign (1 district)	143
News items in newspapers (in 1 district during February and in 2 districts during August, December, and January)	77
Painted bulletin board (1 district)	74
Postal cards (1 district)	73
Friends in the Army	55
Total	142,824
Not the result of advertising	6,826
Total number of applicants reported upon	149,650

It is evident from the foregoing list of methods of advertising for recruits that the efforts of the recruiting officers to attract the attention of men who are likely to be candidates for enlistment continued to be exhaustive and resourceful.

A comparison of the results obtained in the larger cities from the principal methods of advertising with the results obtained in the smaller cities is interesting.

The following table shows, for all recruiting stations, for the stations in 10 large cities, and for those in 10 small cities the percentages of applicants for enlistment attracted by each of the principal methods of advertising during the fiscal year ended June 30, 1912:

Methods of advertising.	All recruiting stations.	Ten large cities.	Ten small cities.
Sight of recruiting flag and station	44.21	51.14	39.86
Recruiting poster	18.83	12.29	29.33
Newspaper advertisement	10.98	7.82	9.52
Recruiting circular	6.24	6.41	7.44
Canvass by recruiting parties	3.05	.29	6.98
Other methods	12.13	18.51	4.00
Not the result of advertising	4.56	3.54	2.87
Total	100.00	100.00	100.00

It will be seen from the foregoing table that, as in previous years, the sight of the recruiting flag and station attracted more applicants than any other method, the recruiting poster being second. In the

large cities approximately five applicants were attracted by the sight of the recruiting flag and station to two attracted by the recruiting poster, while in the small cities but four were attracted by the recruiting flag and station to three attracted by the recruiting poster.

The very few complaints that reached the War Department during the past fiscal year with regard to the quality of recruits received at military posts is indicative of the care exercised by the general recruiting service and at recruit depots and depot posts to prevent the enlistment of men unfitted for the service.

The Army appropriation act approved August 24, 1912, provides that enlistments in the Regular Army made on and after November 1, 1912, shall be for the term of seven years instead of three years. While the term of enlistment under the provisions of that act is seven years, but four of these need be served with the colors, except in the event of actual or threatened hostilities, it being provided that the last three years of the enlistment period shall be served on furlough while attached to the Army Reserve. Besides this, for those intending to reenlist, the seven-year period may be shortened to four by reenlisting at the end of four years. Or, if the soldier prefers, he may, on his own written application, serve the whole seven years with his organization, or may, in the discretion of the Secretary of War, pass into the reserve on completing three years' active service. The effect on the recruiting service of this change in the enlistment contract can not be foretold.

JOINT CAMPS OF INSTRUCTION AND MANEUVER CAMPS.

Under the direction of the several division commanders, joint camps of instruction for troops of the Regular Army and of the Organized Militia of the several States and Territories were established at Mount Gretna, Pa., Anniston, Ala., Columbus, Miss., Harpers Ferry, W. Va., Alexandria, La., Pole Mountain, Wyo., Fort Benjamin Harrison, Ind., Sparta, Wis., Fort Leavenworth, Kans., Fort Riley, Kans., near Springfield, Ill., at Ludington, Mich., Nevada, Mo., Iowa Falls, Iowa, Fort William H. Harrison, Mont., Fort Huachuca, Ariz., San Francisco, Cal., and Grays Harbor, Wash., during the months of July and August, 1912. The periods during which these several camps were in operation varied from 10 days to one month in duration.

It is impracticable from the reports and returns relative to these joint camps of instruction that have reached this office to make any statement that would be at all reliable with regard to the number of troops that participated in the respective camps.

Maneuvers, simulating the defense of the city of New York and designated as the "Connecticut Maneuver Campaign," were held from August 10 to 19, 1912, in the vicinity of Bridgeport, Conn. Those maneuvers were participated in by troops of the Regular Army and the Organized Militia of Maine, Vermont, Massachusetts, Connecticut, New York, and New Jersey.

SMALL-ARMS FIRING.

As the regular target practice season varies in the several divisions and departments, and in some instances extends to the close of the calendar year, it has been found to be impracticable to make a complete statement of the results of the practice for the year 1912 in the

current annual report. It has been the custom to announce the results of target practice in War Department general orders or bulletins as soon as the reports for the year have been received, examined, and digested.

The results of the small-arms firing of the several organizations of the line of the Army in target practice for the year 1911, not including the organizations stationed in the Philippine Islands, were published in Bulletin No. 4, War Department, March 25, 1912. Because of the fact that under the Provisional Small-Arms Firing Manual, 1909, qualification in the grades of expert rifleman and sharpshooter was made more difficult there has been a decrease in the number of qualifications in rifle firing for 1910 and 1911 as compared with the number for the year 1909. For the target year 1910, 2,151 expert riflemen, 8,857 sharpshooters, and 5,741 marksmen, and for the target year 1911, 1,211 expert riflemen, 7,326 sharpshooters, and 5,196 marksmen of the line of the Army were reported as qualified, as against 2,875 expert riflemen, 9,790 sharpshooters, and 5,815 marksmen for the year 1909. The decrease was due also, to some extent at least, to the fact that only officers who actually fired were classified for the target years 1910 and 1911, and that some organizations were excused from record practice because of the exigencies of the service during the period of the regular small-arms practice.

Under paragraph 1368, Army Regulations, enlisted men qualifying as expert riflemen, sharpshooters, and marksmen are entitled to additional pay of $5, $3, and $2 a month, respectively, "from the date of qualification to the end of the enlistment in which they qualify, provided that during that time they do not attain a higher classification and that they continue to be members of an organization armed with the rifle or are transferred for the convenience of the Government to some organization not so armed."

The grade of expert revolver shot was established in revolver practice by paragraph 349, Provisional Small-Arms Firing Manual, 1909, and reports of the results of revolver firing in the several organizations of the line of the Army during the target years 1910 and 1911 show, respectively, 810 and 1,050 qualifications in that grade. A silver badge is provided for each original qualification.

Departmental and Army small-arms competitions are held in each alternate year, the Secretary of War having directed that they be held in the odd-numbered years. As was stated in the last Annual Report of The Adjutant General no competitions were held in 1911 because of the exigencies of the service.

The National Board for the Promotion of Rifle Practice met in January, 1912, to arrange for the holding of the national matches and other annual competitions for 1912 and to prescribe regulations for the conduct of those competitions. However, the conditions of the service were such as to render it impracticable to furnish officers and enlisted men of the Regular Army for duty in connection with the competitions or to organize service teams to participate in those competitions, and consequently the Secretary of War decided that the War Department should not conduct the national matches for 1912. The regulations for the government of those matches were not printed.

TROOPS ENFORCING NEUTRALITY LAWS ON THE MEXICAN BORDER.

Under date of January 31, 1912, the general officer commanding the troops stationed at and near El Paso, Tex., reported that the greater part of the federal garrison of the Mexican town of Juarez had revolted and that consequently he had taken measures to guard the American end of the international bridge in order to prevent violations of the so-called neutrality laws. Subsequently, the insurrection extended to other points on or near the border, and it was found necessary to station detachments of troops at various places along the border line in order to guard against violations of the neutrality laws.

There are now on duty in connection with the patrol of the Mexican border the following-named organizations of the Army: Company I, Signal Corps; Second, Third, Fourth, Ninth, Thirteenth, and Fourteenth Regiments of Cavalry; Battery B, Third Field Artillery; Companies C and G, Twelfth Infantry; First Battalion, Eighteenth Infantry; Twenty-second Regiment of Infantry; and the Twenty-third and One hundred and fifteenth Companies, Coast Artillery Corps. The approximate total strength of those organizations is 6,754 officers and enlisted men.

GOVERNMENT HOSPITAL FOR THE INSANE.

It appears from the reports of the superintendent of the Government Hospital for the Insane that during the fiscal year covered by this report 176 persons were admitted to that institution on account of service in the Regular or the Volunteer Army of the United States. Those admissions consisted of 3 officers and 59 enlisted men on the active list, 1 retired officer, 2 retired enlisted men, 30 former enlisted men of the Regular Army, 75 former Volunteers, and 6 general prisoners.

There were 9 commissioned officers of the Army under treatment at the hospital at the beginning of the fiscal year. During the year, 4 officers (3 active and 1 retired) were admitted to the hospital, 1 died, and 4 were relieved from treatment, leaving 8 officers of the Regular Army under treatment at that institution on June 30, 1912.

It was the practice to discharge enlisted men from the military service directly after their admission to the institution. In February, 1912, the practice of notifying the superintendent of the hospital at least 30 days in advance of the date on which it is proposed to discharge from the Army an enlisted man admitted to that institution was begun. This practice was adopted in order that the authorities of the hospital might have an opportunity, if they so desired, to complete civil proceedings for legal commitment in advance of the release of a soldier from military control.

UNITED STATES MILITARY PRISON.

By law, the government and control of the United States Military Prison is vested, under the Secretary of War, in the Board of Commissioners of the United States Soldiers' Home, and the president of that board is required to submit to the Secretary of War annually a statement of the financial and other affairs of the prison. It is believed, therefore, to be unnecessary to present in this report any-

thing with regard to the United States Military Prison, or the Pacific Branch thereof, other than to show the number of general prisoners in confinement there.

At the beginning of the fiscal year there were 913 general prisoners in confinement at the United States Military Prison, Fort Leavenworth, Kans. During the year, 804 general prisoners were received, 576 were released upon expiration of sentence, 57 were released by remission of sentence, 2 died, and 129 were transferred to other places of confinement, leaving 953 general prisoners in confinement there on June 30, 1912.

At the beginning of the year there were 503 general prisoners in confinement at the Pacific Branch of the United States Military Prison. During the year 585 general prisoners were received, 470 were released upon expiration of sentence, 62 were released by remission of sentence, 2 escaped, and 81 were transferred to other places of confinement, leaving 473 general prisoners in confinement there on June 30, 1912.

GENERAL PRISONERS.

An amendment to paragraph 943, Army Regulations, published in General Orders, No. 172, War Department, December 29, 1911, to take effect February 15, 1912, changed the designation of "persons sentenced to dismissal or dishonorable discharge and to terms of confinement at military posts or elsewhere," from "military convicts" to "general prisoners."

At the beginning of the fiscal year 1912 there were 2,178 general prisoners in custody. Of this number 705 were in confinement at military posts, 18 at the United States Penitentiary, Leavenworth, Kans., 913 at the United States Military Prison, Fort Leavenworth, Kans., 503 at the Pacific Branch, United States Military Prison, Alcatraz Island, Cal., 30 at the Government Hospital for the Insane, Washington, D. C., and 9 were in transit from one place of confinement to another.

During the fiscal year 2,247 general prisoners were committed to confinement, 18 escaped prisoners were recaptured, 1,959 general prisoners were released at expiration of sentence, 34 escaped, 3 died, 3 were paroled, and the whole of the unexecuted parts of sentences were remitted in 162 cases, leaving 2,282 general prisoners in custody on June 30, 1912. Of this number 781 were in confinement at military posts, 15 at the United States Penitentiary, Leavenworth, Kans., 953 at the United States Military Prison, Fort Leavenworth, Kans., 473 at the Pacific Branch, United States Military Prison, Alcatraz Island, Cal., 34 at the Government Hospital for the Insane, Washington, D. C., and 26 were in transit from one place of confinement to another.

It will be seen from the foregoing figures that during the fiscal year there was an increase of 76 in the number of general prisoners confined at military posts, 40 in the number confined at the United States Military Prison, Fort Leavenworth, Kans., 4 at the Government Hospital for the Insane, and 17 in the number in transit, while there was a decrease of 30 in the number at the Pacific Branch of the United States Military Prison, and 3 at the United States Penitentiary, Leavenworth, Kans., a net increase of 104 in the number of general prisoners in confinement.

The number of general prisoners reported to have escaped during the year was 12 less than during the preceding year and 48 less than during the fiscal year 1910. Of the 34 escapes reported, 2 occurred at the Pacific Branch, United States Military Prison, Alcatraz Island, Cal., and the remainder (32) escaped from military posts at which they were confined. The largest numbers of escapes of general prisoners from military posts were reported as having occurred at Fort Sheridan, Ill., and Fort Jay, N. Y., those numbers being 5 and 4, respectively. During the preceding year the largest numbers of escapes occurred at Fort Des Moines, Iowa, Fort D. A. Russell, Wyo., and Fort Sill, Okla., those numbers being 4 for the former and 3 each for the two latter posts. During the past fiscal year 3 escapes were reported from Fort Leavenworth, Kans., Fort Sam Houston, Tex., and Fort Sill, Okla.; 2 from Fort Ruger, Hawaii; 1 from Fort Barrancas, Fla., Fort Ethan Allen, Vt., Fort Lincoln, N. Dak., Fort Logan H. Roots, Ark., Fort McHenry, Md., Fort McPherson, Ga., Fort Meade, S. Dak., Fort Myer, Va., Fort Porter, N. Y., Presidio of San Francisco, Cal., Fort Riley, Kans., and Fort Robinson, Nebr., respectively.

With a view to separate, so far as practicable, prisoners convicted of purely military offenses alone from those convicted of statutory or common law crimes or misdemeanors, either alone or in connection with purely military offenses, the Secretary of War in December, 1911, directed that on and after February 15, 1912, a penitentiary may, and ordinarily will, be designated as the place of confinement of a general prisoner sentenced to be confined for more than one year upon conviction of an offense punishable by confinement in a penitentiary under some statute of the United States or of the State, Territory, or District in which the offense was committed or under the common law as the same is in force in such State, Territory, or District; that the United States Military Prison at Fort Leavenworth, Kans., or a military post, will be designated as the place of confinement of a general prisoner convicted of a military offense alone, and that the Pacific Branch of the United States Military Prison at Alcatraz, Cal., or a military post, will be designated as the place of confinement of a general prisoner whose case does not come within the terms of either of the preceding provisions.

As in previous years, applications for clemency in the cases of prisoners undergoing confinement in execution of sentences of general courts-martial added materially to the correspondence of the office. At the beginning of the fiscal year 44 applications for clemency, previously made, had not received final consideration, they having been referred to the commanding generals of military divisions or elsewhere in the course of investigation as to the merits of the cases. During the year 1,773 applications for clemency were received, but 74 of these were cases in which other applications were pending at the date of their receipt. Clemency was denied in 1,162 cases, the unexecuted parts of sentences were wholly remitted in 123 cases, parts of the unexecuted sentences were remitted in 308 cases, and in 4 cases recommendation was made to the Department of Justice for parole under the act of Congress approved June 25, 1910. Before final action had been taken on applications for clemency in their cases, 7 general prisoners had been released on expiration of sentence and 1 had escaped. At the close of the fiscal year 138 cases had not received

final consideration, having been referred to commanding generals or others in the course of investigation as to the merits of the cases and not having been returned to this office before the close of the year.

The number of cases received does not represent the number of individual prisoners by whom, or in whose behalf, applications for clemency were made. In many cases as soon as one application is denied another is presented, as many as six consecutive applications having been received during the year in the case of one general prisoner. The 1,597 cases acted upon during the year were applications in the cases of 1,402 general prisoners, as against 1,378 applications in the cases of 1,174 general prisoners acted upon during the preceding year.

The unexecuted parts of sentences of confinement were remitted by the War Department in the cases of 8 general prisoners during the past fiscal year upon the recommendations of the commandants of the prisons, who had been authorized, in order to give special recognition at suitable times to those who had gained the most meritorious records, to recommend for clemency on the Fourth of July and Thanksgiving Day of each year, 2 general prisoners at the United States Military Prison and 2 at the Pacific Branch who had served not less than 18 months of their terms of confinement and who had the best records of conduct at the prisons.

In addition to the cases considered upon applications the unexecuted parts of sentences were remitted by the War Department for administrative reasons in the cases of 13 general prisoners without applications for clemency having been made in their behalf.

The number of applications for clemency acted upon by the commanding generals of the several military divisions is unknown. The whole of the unexecuted sentences were remitted by commanding generals in 39 cases, making a total of 162 cases in which the whole of the unexecuted parts of the sentences of confinement were remitted by the War Department or by subordinate military authorities during the year. During the preceding year the whole of the unexecuted sentences were remitted by commanding generals in 10 cases, making a total of 156 cases in which the whole of the unexecuted parts of the sentences of confinement were remitted by the War Department or by subordinate military authorities during that year. It will be observed, however, that the numbers of remissions of sentences by division commanders, before shown, include only general prisoners in whose cases execution of the sentences of confinement had been begun, and does not include cases in which the sentences of confinement were remitted by commanding generals at the time the records of the courts-martial were acted upon, the number of the cases of the latter class being unknown to this office.

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PERSONAL IDENTIFICATION SYSTEM.

The use of finger prints as a means of personal identification was continued during the past fiscal year. At the close of that year 226,525 finger-print records had been received in this office. Of these, 67,114 were made in cases of reenlistment in which records made during the previous service were on file. As was stated in the preceding annual report of this office, it has been found to be

necessary to obtain finger-print records of men reenlisting, although finger-print records of these men made during a prior service are on file. This is necessary for the purpose of detecting cases, several of which have been discovered, in which a man with a discharge certificate in his possession claimed the service represented by, and enlisted under the name appearing in, that discharge certificate, although it was established beyond doubt when his finger prints were received in this office that he was not the man he claimed to be. On June 30, 1912, the office had on file finger-print records of 159,411 individuals who were then or had been previously enlisted men in the Army.

During the fiscal year ended June 30, 1912, 337 cases of fraudulent enlistment by former deserters, general prisoners, and others were discovered through the operation of the finger-print system of personal identification. During the preceding year the number of cases of fraudulent enlistment discovered through this system was 326 and during the fiscal year 1910 the number was 222.

Of the 337 cases of identity discovered during the past fiscal year, 25 had been withdrawn from military control when the discovery was made. Of the remaining 312 cases, 22 were held in service, 272 were dishonorably discharged and confined for various periods by sentences of general courts-martial, 13 were discharged without honor, 1 was discharged on surgeon's certificate of disability, and in 4 cases no report of final determination has been received.

INDEX-RECORD CARD WORK.

As in the preceding fiscal year, the index-record card work performed during the fiscal year ended June 30, 1912, consisted chiefly of the reproduction of the individual-service records of Confederate troops in service during the Civil War. Some few records of organizations that served in Indian outbreaks, the Whisky Insurrection, and other disturbances between the conclusion of the Revolutionary War and the commencement of the War of 1812 were carded during that year.

The work of carding individual-service records was prosecuted as rapidly as the condition of the current business would permit. During the fiscal year there were prepared 608,871 military cards and 3,580 medical cards, making, with those previously prepared, a total of 50,385,734 of the former and 7,914,111 of the latter class, or an aggregate of 58,299,845 index-record cards prepared up to and including June 30, 1912. The numbers of index-record cards above referred to do not include medical cards pertaining to the Regular Army, most of which are current medical-report cards received in the Surgeon General's Office and transmitted to this office after they have become noncurrent. There are approximately 9,750,000 medical cards, including those of the Regular Army, now on file in this office.

The foregoing statement of the number of index-record cards prepared to June 30, 1912, includes 6,903,335 Confederate military cards, 591,367 of which were prepared during the past fiscal year. As was stated in preceding annual reports of this office, those cards were prepared in the process of compilation of the Roster of Officers and Enlisted Men of the Union and Confederate Armies, pursuant to the act of Congress approved February 23, 1903 (32 Stat. L., 884), and represent entries on the records and not individuals.

OFFICIAL RECORDS OF THE UNION AND CONFEDERATE ARMIES.

Eight sets of the Official Records of the Union and Confederate Armies, consisting of 1,024 books and 1,424 atlas plates, were distributed during the fiscal year to the Senators, Representatives, and Delegates to the Fifty-seventh Congress and to the permanent libraries and educational institutions designated by those Senators, Representatives, and Delegates under the provisions of the act of Congress approved March 3, 1903 (32 Stat. L., 1145).

No sale of the Official Records of the Union and Confederate Armies, or any part thereof, was made by The Adjutant General's Office during the past fiscal year.

ROSTER OF OFFICERS AND ENLISTED MEN OF THE UNION AND CONFEDERATE ARMIES.

But little addition to the collection of Confederate records in the possession of the War Department was made during the past fiscal year. Only 8 miscellaneous records of Texas organizations, 3 miscellaneous letters, and 10 rosters of an Alabama Infantry regiment were loaned to the department during that year, in connection with the work of making the collection of Confederate records in the possession of the War Department more complete. Those records were copied and the originals returned promptly to the persons who loaned them.

Preceding annual reports of The Adjutant General of the Army contain detailed statements with regard to the method of reproduction, by the index-record card system, of the individual-service records of the officers and enlisted men of the Union and Confederate Armies as a preliminary step in the compilation of the roster of officers and enlisted men of those armies. During the past fiscal year further progress was made in reproducing the records of Confederate services, that work including the reproduction of records of organizations from Texas and Virginia.

The work of compiling the Union records of Confederate prisoners of war was also continued. As was stated in the last preceding annual report of this office, the reproduction of the Confederate records of any one State will not be completed until all of the Union records of Confederate prisoners of war have been reproduced, because much information concerning the services of many men, whose names would not appear in the roster unless those records were compiled, is to be found on those records. Nor will the reproduction of the records of men in service from any one State be completed until the Confederate medical records shall have been reproduced, because records of service in the Confederate Army are to be found in many cases on the medical records only, due to the incompleteness of the collection of Confederate military records in the possession of the War Department.

As shown elsewhere in this report, the whole number of Confederate military index-record cards prepared up to and including June 30, 1912, was 6,903,335. These cards represent record entries carded and do not represent the number of individuals in service, because the record of one individual may appear on a number of cards.

MEDALS OF HONOR.

The legislation now in force under which medals of honor are issued by the War Department is contained in the act of Congress approved April 23, 1904 (33 Stat. L., 274),

Only 7 medals of honor were issued during the fiscal year ended June 30, 1912. Of these, 6 were issued to replace medals of the old design and 1 was an original issue of a medal awarded during the year. The whole number of awards of the Congressional medal of honor up to and including June 30, 1912, was 2,609.

CAMPAIGN BADGES.

A summary of the campaigns for which the issue of campaign badges has been authorized is published in General Orders, No. 129, War Department, August 13, 1908. The issue of those badges, which are intended "to commemorate services which have been or shall hereafter be rendered in campaign," was authorized by General Orders, No. 4, War Department, January 11, 1905.

During the past fiscal year 410 other names were added to the lists of officers and enlisted men who were found to be entitled to campaign badges, making a total of 40,445 officers and enlisted men found to be entitled to those badges. Of these, 29,454 were entitled to Philippine campaign badges, 7,183 to Spanish campaign badges, 1,605 to China campaign badges, 1,788 to Indian campaign badges, and 415 to Civil War campaign badges.

The campaign badges are issued as articles of uniform to officers and enlisted men in service by the Quartermaster General of the Army on data furnished by The Adjutant General's Office.

It was decided by the Secretary of War in 1908 that campaign badges may be issued to members of the Organized Militia who are entitled to wear the uniform of the United States Army and whose service conforms to the requirements of General Orders, No. 129, before cited. Since the date of that decision (May 26, 1908) data have been furnished to the Quartermaster General of the Army in the cases of approximately 1,675 members of the Organized Militia who made application for campaign badges.

In addition to the campaign badges before referred to, the issue of a service badge, to be known as the Army of Cuban Pacification badge, was authorized by General Orders, No. 96, War Department, May 11, 1909. Data have been furnished to the Quartermaster General in the cases of 6,184 applications for those badges since the date of the order authorizing their issue. The Army of Cuban Pacification badge is issued to officers and enlisted men who were in service on May 11, 1909, or thereafter, and who served as officers or enlisted men in Cuba with the Army of Cuban Pacification between October 6, 1906, and April 1, 1909.

The issue of a certificate of merit badge and ribbon to each officer and enlisted man in the service to whom a certificate of merit had been or might thereafter be issued was authorized in General Orders, No. 4, War Department, January 11, 1905, as amended in General Orders, No. 129, War Department, August 13, 1908. The badge and ribbon prescribed by these orders are a part of the uniform, and are to be worn in the manner prescribed for campaign badges. At the close of the last fiscal year 183 certificate of merit badges had been issued.

PHILIPPINE SERVICE MEDAL.

The issue of "Philippine service medals," so called, is authorized by the act of Congress approved June 29, 1906 (34 Stat. L., 621). Those medals are issued by the Quartermaster General of the Army

on data furnished by The Adjutant General's Office. They are, under the terms of the act cited, "to be presented to each of the several officers and enlisted men and families of such as may be dead, who, having volunteered and enlisted under the calls of the President for the War with Spain, served beyond the terms of their enlistment to help to suppress the Philippine insurrection, and who subsequently received an honorable discharge from the Army of the United States, or who died prior to such discharge."

Up to and including June 30, 1911, statements as to whether service upon which the application was based was such as to authorize the issue of that medal had been made by The Adjutant General's Office in 6,896 cases. During the past fiscal year similar statements were made in 245 cases, making a total of 7,141 applications for Philippine service medals received since the enactment of the legislation before cited. In 6,193 of these cases the service was found to be such as to come within the provisions of the law, and in the remaining 948 cases the service was found to be such as to preclude the issue of the medal. In a great majority of the cases of the latter class, the applicants, or the persons on account of whose service applications were made, did not enter the service under a call of the President for the War with Spain, or did not serve in the Philippine Islands, or did not serve in the Philippine Islands after the termination of the War with Spain, or the service was not terminated honorably.

In the case of each of the applications received, the Quartermaster General was advised with regard to the record of the applicant or the person on account of whose service the application was made.

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GEO. ANDREWS,
The Adjutant General.

REPORT OF THE INSPECTOR GENERAL.

WAR DEPARTMENT,
OFFICE OF THE INSPECTOR GENERAL,
Washington, August 29, 1912.

SIR: I have the honor to submit the following report of the work of this department during the fiscal year ended June 30, 1912:

PERSONNEL.

The number of officers in the permanent establishment remains as reported for several years past, namely, one brigadier general and two colonels.

At the close of the fiscal year the inspectors general doing duty in the department under the provisions of the act of February 2, 1901, consisted of one colonel, four lieutenant colonels, and nine majors; and, under the provisions of the act of June 23, 1874, the four acting inspectors general consisted of one colonel, one lieutenant colonel, and two majors.

These officers have, without exception, performed their varied duties in a zealous, fearless, and intelligent manner; and the only difficulty presented was that they were too few in number for the full performance of the numerous and varied duties required of them. Four officers were originally assigned to each of the geographical divisions for duty as inspectors general, but not more than three officers were available at any time in one of the divisions, and, since February 26, 1912, the work has fallen upon two officers. On this account several important inspections in that division could not be completed within the fiscal year. A few inspections were also omitted in each of the other geographical divisions.

PHILIPPINES DIVISION.

The inspector general stationed at headquarters Department of Mindanao, Philippine Islands, had no clerk, and was therefore necessarily hampered and delayed in his work. The inspector general of the Philippines division has recommended that this officer be transferred to Manila, as it is impracticable to properly coordinate, supervise, and facilitate his work at Zamboanga. A lack of clerical assistance in the Inspector General's Office is again reported at the headquarters of the Philippines division, where it is stated inspectors have had to devote too much time to clerical work to the disadvantage of their more important duties outside of the office.

INSPECTIONS.

During the past fiscal year, due to changes in Army administration, the inspection of the Army has been made under orders of division commanders instead of department commanders as heretofore.

The inspection of the military establishment, though not entirely completed, was approximately so; and was as nearly complete as the insufficient force of inspectors permitted. This inspection embraced every phase of military affairs, and included all the stated duties assigned to the department; as the inspection of military posts, stations, and commands, the Military Academy, service schools, camps of maneuver and instruction, the staff offices at all the division headquarters, the armories and arsenals, general hospitals, the depots of the supply departments, the recruit depots and main recruiting stations, the military prisons, the required inspections of Army transports upon arrival at and departure from ports, and the mine planters and cable ships, and the biennial inspections of such ungarrisoned posts and national cemeteries as were due. The usual inspections of the money accountability of all disbursing officers of the Army, and numerous inspections of unserviceable public property presented for condemnation were made. Also included in the work of the fiscal year were the inspections of the Soldiers' Home, District of Columbia, and of the 10 branches of the National Home for Disabled Volunteer Soldiers, from Maine to California.

In addition to these varied and numerous duties, regularly assigned and enumerated above, many special investigations were made during the year by officers of the department, involving much time and labor.

All the irregularities and deficiencies discovered in these inspections and investigations were duly and promptly reported, and the necessary steps were taken in order to obtain immediate and effective remedial action.

FIELD INSPECTIONS AND TRAINING.

During the year the War Department instructions of September 13, 1910, slightly modified by the letter of August 23, 1911, were continued, and governed the officers of this department in their annual inspections of troops of the mobile Army. These instructions required inspections to be conducted so as to develop the state of field efficiency of the troops inspected; and, whenever practicable, the troops (including transportation, etc.) were to be put into camp for at least four days and be thoroughly tested under the orders prescribing field training. The staff departments were included in the problems and exercises, in order to develop the state of preparedness of those departments to meet the conditions and requirements of active service. In the interest of economy and when practicable these inspections were made in connection with the regular practice marches and field maneuvers of troops. When made at the posts the troops were nevertheless to be put in the field for four days and thoroughly tested in field work. These field inspections were distinguished carefully from the post administrative inspections, and separate reports were required.

These inspections have become a leading feature of the work of this department. They are a heavy additional burden but are well worth all they cost, for they bring to light tactical and technical deficiencies which have hitherto attracted too little attention and can not but make commanders of troops more appreciative of the necessity for constant effort to improve the field training of their respective commands.

Improvement of conditions over those of the preceding year was developed by these exercises; but it appears that much work yet remains to be done before all the troops of the mobile Army attain a proper standard of efficiency in practical fieldwork.

The subject of infantrymen's feet, though its importance has been emphasized by the War Department for the last few years, is still more or less neglected; and it is reported that a large number of men still drop out of ranks or give out on the march through trouble with their feet. The principal causes of this trouble are reported as being defective feet before or after enlistment, ill-fitting shoes, shoes out of repair, or ignorance on the part of the men themselves as to how to properly care for their feet. It is believed that much of this trouble could be eliminated by more care on the part of company commanders.

ENLISTED MEN.

The inspector general, Philippines division, reports that he has noticed so many staff sergeants whose corpulency evidently unfits them for field service that he recommends for them enforced exercise, and a suitable walking test similar to that prescribed for officers.

DISCIPLINE.

The reports of inspectors show that the general state of discipline throughout the Army is good.

INSTRUCTION.

The reports received indicate considerable variation in the state of instruction of the different units, and that the high standard which should be required of the Regular Army has not generally been attained.

Instruction in fencing and in the bayonet exercises is still below the proper standard. This work is somewhat handicapped because the fencing bayonets issued are too fragile. The Ordnance Department reports that this defect will be remedied in the next issue of fencing equipment.

Instruction in the mobile units in sending and receiving messages with the flag is not satisfactory. While many men can send and receive after a fashion but few acquire the skill necessary to enable them to render valuable service in the field.

While there are some improvements in the methods of field instruction, the results show that there is need for greater effort on the part of commanding officers.

It is reported that all commanding officers have not arrived at the point where they look upon field training as a serious matter, except upon unusual occasions; and the desired results can hardly be looked for until all commanding officers are held to a strict accountability for the field efficiency of their commands.

As heretofore, the reports of inspectors indicate that systematic instruction of troops is hampered to a great extent by the absence of officers, especially of captains, from their commands.

CLOTHING.

None of the varieties of the legging now issued appears to be very satisfactory. The canvas puttee legging is most unsightly, and the legging lacing in front wrinkles at the bottom.

There has also been complaint by many officers as to their inability to obtain promptly from the Quartermaster's Department clothing of the kinds and sizes necessary to properly equip their commands. It is believed that the trouble in connection with this matter is, in large part, due to the adoption of a new system of supply, and the trouble should become less as all become more familiar with the operations of the system. In any event a change is not recommended until the system has been given a sufficient test.

Many recommendations have been received, especially from the Philippines, that trousers and helmets be added to the clothing list and authorized generally as articles of uniform. The helmet is now authorized in the Philippines, except for field service; in my opinion trousers should be issued for use by clerks and others employed indoors during long hours and by soldiers off duty, or as may be prescribed by commanding officers.

ARMAMENT AND EQUIPMENT.

So far as reported, the armament and equipment of the troops appear to be satisfactory, lack of uniformity to some extent being unavoidable on account of the necessity for using up articles of obsolete type. The new equipments for Cavalry and Infantry have not been sufficiently tried out to develop their merits or demerits.

With the adoption of the new equipment the time seems opportune for publishing equipment regulations in pamphlet form, similar to the Uniform Regulations.

SUBSISTING THE TROOPS.

It appears from reports received that while the present system of subsisting the troops works satisfactorily in garrison it does not always do so in the field, even in our simple field exercises. When an organization takes the field the ration carried along is largely determined by the company commander or by his company mess sergeant instead of by the higher commanders, and the choice is not always a good one. Such a system in time of war must entirely break down. It results in a great variety of rations being carried by organizations, the overloading of wagons, and the presence of unnecessary luxuries in the field. It is recommended that the rations of each maneuver campaign be fixed by the higher commanders participating under Army Regulations 1223.

GUARDING PRISONERS.

As the former system of working prisoners under sentinels appeared to convey a false impression to the public as to the character of prisoners—giving the impression, as it did, that the Army is full of bad characters requiring forcible handling, injuring the self-respect of the prisoners, discouraging enlistments, and lowering the military service in the public opinion—the Secretary of War (May 27, 1911) directed that post commanders adopt a different method of handling those garrison prisoners who are confined for comparatively short periods of time, to the end that the fewest possible number be required to work under guard. They were further directed that, as far as practicable, garrison prisoners should be paroled for work under the general supervision of the officer or noncommissioned officer in charge of prisoners.

On February 3, 1912, the Secretary of War directed that inspectors general, in their regular post inspections, make special inquiry into the manner in which this order is being enforced. This has been done at all the posts since the receipt of the instructions. The reports show that, with two or three exceptions, these instructions are being carried out.

RECRUITS.

So far as reported, the recruits received during the past fiscal year have come fairly up to the standard to be expected.

EQUITATION.

Reports show continued interest and improvement in the subject of equitation in all branches of the mobile Army.

PUBLIC ANIMALS.

Reports from the Philippines division indicate that a large percentage of the horses and mules in that division are no longer serviceable and should be condemned and replaced.

Reports from both the Western and Philippines divisions mention that the horses furnished for the mounted detachments of Infantry regiments are deficient and do not come up to the standard required for the mounted service.

On August 10, 1911, under instructions from the Secretary of War, inspectors general were directed to ascertain what have been the results of feeding public animals three times a day; also, what results have been developed by the training of young horses received from the remount depots at the various posts, in accordance with General Orders, No. 188, War Department, 1910.

The reports show that favorable results have been obtained from feeding three times a day and that the training of remounts at posts is improving.

TRANSPORTATION.

The Secretary of War directed (January 26, 1912) that inspectors general, in their inspections of military posts and camps, devote special attention to ascertaining (1) the amount and character of transportation employed at each post, and (2) what transportation—harness, wagons, etc.—is purchased from troop funds and owned by regimental or hospital organizations or post exchanges, with a view to determining whether or not the possession of wagons by such organizations, while other organizations are without them, is regarded as a discrimination in any form, as in general it is desired to know whether any economies can be introduced into the fixed charges of the Army regarding animal and wagon transportation without the impairment of efficiency.

Owing to the late date in the fiscal year when these instructions were received many posts have not been reported on, but the reports received show—

(1) That the amount of wheeled transportation adapted purely to post use—spring wagons—is generally in excess of the allowance prescribed in Army Regulations 1118, while the wagon transportation to accompany troops in the field is in some cases short.

(2) That in the mounted organizations a number of troops and batteries are reported as owning light wagons, paid for out of the company funds. None of the reports indicate that other organizations regard this as a discrimination, but these wagons usually involve an unauthorized use of troop horses. Their use in the field is prohibited under paragraph 228, Field Service Regulations, and no necessity exists for their use in garrison.

SANITATION OF POSTS.

So far as reported, the sanitation of posts was found to be excellent, and the measures adopted for the prevention of disease have produced gratifying results.

PUBLIC FUNDS.

The public funds have been efficiently administered, and inspections show that the laws and regulations have generally been carefully observed.

PHILIPPINE SCOUTS.

The scouts have continued during this year the improvement that has marked their work from the beginning.

The reports indicate gratifying results from the present method of appointment of majors of scout battalions, who are selected from the grade of captain in the Regular Army, and are usually found to be men of ability and energy and models for the officers and men of their respective battalions. The officers also form a real link between the scouts and the rest of the Army—a matter of advantage to both.

TRANSPORTS.

Reports of inspectors indicate an improvement in the transport service. A desirable increase has been made in the ration allowance.

The life-saving equipment is being gone into thoroughly, and the rule now is that transports carry no more human beings than can be cared for with their equipment of lifeboats and rafts.

Respectfully submitted.

E. A. GARLINGTON,
Inspector General.

The SECRETARY OF WAR.

REPORT OF THE JUDGE ADVOCATE GENERAL.

SEPTEMBER 25, 1912.

SIR: I submit the following annual report of the Judge Advocate General's Department for the year ending June 30, 1912:

NUMBER OF TRIALS BY GENERAL COURTS-MARTIAL.

Commissioned officers		29
Convictions approved	19	
Acquittals approved	5	
Acquittals wholly disapproved	1	
Awaiting action of War Department	3	
Resigned prior to action in case	1	
Cadets		10
Convictions approved	9	
Convictions wholly disapproved	1	
Enlisted men		4,343
Convictions approved	4,008	
Convictions wholly disapproved	76	
Acquittals approved	228	
Acquittals wholly disapproved	30	
Record lost before action in case	1	
General prisoners		53
Convictions approved	47	
Convictions wholly disapproved	1	
Acquittals approved	3	
Acquittals wholly disapproved	1	
Special plea in bar of trial sustained	1	
Total		4,435

The statistics as to trials by general courts-martial in recent years are as follows:

	1907	1908	1909	1910	1911	1912
Commissioned officers tried	32	28	43	30	42	29
Cadets tried	2	1	2	4	5	10
Enlisted men tried	3,763	3,994	5,449	5,127	3,756	4,343
Marines tried (in Cuba)	71	61	30	.....	.....	.....
General prisoners tried	45	52	56	45	48	53
Commissioned officers dismissed	4	3	10	7	6	6
Cadets dismissed	.....	.....	.....	2	.....	6

The number of trials of enlisted men by general court-martial was 6 per cent of the average enlisted strength of the Army in 1907, 6.2 per cent in 1908, 7.4 per cent in 1909, 6.98 per cent in 1910, 5 per cent in 1911, and 5.2 per cent in 1912.

ADDITIONAL GENERAL COURT-MARTIAL STATISTICS.

Charges received recommending trial by general courts-martial	4,786
Charges referred for trial by general courts-martial	4,583
Charges returned for trial by inferior courts-martial	85
Charges upon which no trial ordered	87
Defective charges requiring amendment before reference	1,471
Cases in which proceedings returned for revision	356
Enlisted men dishonorably discharged as result of trial	2,273
Above cases in which dishonorable discharge was authorized only because of five previous convictions	332
Trials in which reporter was employed	4,019
Trials in which reporter was not employed	416
Total amount expended for reporters	$34,389.87

NUMBER OF TRIALS BY INFERIOR COURTS-MARTIAL.

	Summary.			Garrison.			Regimental.		
	Convicted.	Acquitted.	Total.	Convicted.	Acquitted.	Total.	Convicted.	Acquitted.	Total.
Enlisted men	36,269	1,036	37,305	161	48	209	36	4	40
General prisoners	99	8	107	5	.....	5	.....	.....	.....

CLASSIFICATION OF OFFENSES TRIED BY ALL COURTS-MARTIAL.

The following table shows the number of approved convictions of different offenses by all courts-martial classified according to the nature of the offense:

Article of war.	Description of offense.	Number of convictions.		
		Officers.	Enlisted men.	General prisoners.
	Offenses relating to public property:			
16	Wasting ammunition	.....	25	.....
17	Selling clothing and accouterments	.....	132	.....
17	Losing or spoiling horse or arms	.....	63	.....
17	Losing or spoiling accouterments or clothing	.....	420	.....
62	Abusing public animals	.....	192	.....
62	Pawning and disposing of clothing	.....	86	.....
62	Losing arms, accouterments, stores, or other property	.....	99	.....
62	Destroying or spoiling public property	.....	104	.....
	Other offenses relating to public property under sixty-second article of war	.....	233	5

Classification of offenses tried by all courts-martial—Continued.

Article of war.	Description of offense.	Number of convictions.		
		Officers.	Enlisted men.	General prisoners.
	Offenses against constituted authority:			
19	Disrespectful words against the President		1	
20	Disrespect to commanding officer		44	
21	Disobeying superior officer	1	111	
21	Offering violence to superior officer		4	
24	Disobeying noncommissioned officer while quelling frays, etc		7	
62	Disobedience of orders of Secretary of War by neglect to answer official correspondence	5		
62	Disobedience of standing orders or regulations		2,140	21
62	Disobedience of or failure to obey commissioned officer	1	777	5
62	Disobedience of or failure to obey noncommissioned officer		2,789	4
62	Disobedience of or failure to obey sentinel		75	4
62	Disrespect or insulting language or insubordinate conduct toward a commissioned officer		298	1
62	Disrespect or insulting language or insubordinate conduct toward a noncommissioned officer		2,456	9
62	Disrespect or insulting language or insubordinate conduct toward a sentinel		117	8
62	Resisting arrest by military authorities		95	1
62	Breach of arrest		1,560	
62	Escape or conspiring to escape from confinement or sentinel		91	49
62	Other offenses against those in authority		897	10
	Offenses against subordinates:			
62	Abuse by officer or noncommissioned officer of authority over a subordinate	9	14	
	Conduct unbecoming an officer and a gentleman:			
61	Financial irregularities	10		
61	Drunkenness	1		
62	Fraudulent enlistment		282	
62	Carrying concealed weapons		25	1
	Offenses by guards:			
39	Leaving post		51	
39	Sleeping on post		132	
40	Quitting guard		102	
62	Sentinel allowing a prisoner to escape		32	
62	Sentinel sitting down on post		123	
62	Sentinel permitting prisoner to obtain intoxicating liquor		34	
62	Other offenses committed by sentinels or others on guard in connection with such duty		1,036	
	Offenses of violence:			
62	Threats to kill or injure		72	
62	Assault with dangerous or deadly weapon		53	
62	Assault with intent to do bodily harm		136	
62	Assault with intent to kill		17	
62	Assault or assault and battery and other offenses of violence not against one in authority, or otherwise classified under this subhead		576	5
	Offenses involving personal dishonesty:			
60	Embezzlement or misappropriation		2	
60	Forgery		2	
60	Larceny		55	
60	Making or presenting false claims		1	
62	Wrongful acquirement or disposition of Government property		15	
62	Failure to pay debts	7	131	
62	Failure to return borrowed property		20	
62	Selling, pawning, or otherwise disposing of borrowed property		65	
62	Forgery and uttering forged papers		50	
62	Fraudulent financial transactions	1	8	
62	Larceny		419	2
62	Embezzlement	1	7	
62	Robbery		10	
62	Burglary		10	
62	Obtaining money under false pretenses		25	
62	Other offenses under the sixty-second article of war involving personal dishonesty of the offender	5	224	
	Unauthorized absences:			
31	Lying out of quarters		26	
32	Absence without leave		16,128	
33	Failure to attend roll call, etc		8,564	
34	1 mile from camp without leave		3	
47	Desertions		1,046	
62	Absence without leave or from duty	3	2,965	
	Offenses closely connected with military duty:			
62	Careless handling or discharge of firearms		225	
62	False official statement or report	1	862	1
62	Impersonating superior officer or sentinel		4	
62	Refusing to submit to surgical operation or medical treatment		30	
62	Malingering		3	
62	Sleeping while on duty		39	
62	Other neglects of duty not otherwise classified under this subhead	6	1,878	

Classification of offenses tried by all courts-martial—Continued.

Article of war.	Description of offense.	Number of convictions.		
		Officers.	Enlisted men.	General prisoners.
	Offenses connected with intoxicating liquor:			
38	Drunkenness on duty	1	2,238	
62	Drunkenness at post or in quarters	2	3,294	7
62	Drunkenness and disorderly conduct at post		2,074	5
62	Drunkenness and disorderly conduct causing offender's arrest and conviction by civil authorities		363	
62	Having possession of, selling, or buying intoxicating liquor		143	
62	Introducing liquor into camp, quarters, etc		969	5
62	Other offenses connected with intoxicating liquor and not otherwise classified under this subhead		1,249	3
	Offenses against decency:			
62	Committing nuisance		618	
62	Indecent conduct and exposure of person		109	13
62	Indecent assault		5	
62	Sodomy and other unnatural practices		34	1
62	Rape		1	
62	Other similar offenses		22	
62	Conduct (not involving drunkenness) causing arrest and conviction by civil authorities		155	
62	Loaning money at usurious rates of interest		5	
62	Offenses not otherwise classified	3	1,672	6

Trials by summary courts.

Posts.	Average of enlisted strength present on last day of each month.	Total number of trials by summary courts during year.	Percentage of trials by summary courts during year.
Adams, Fort, R. I	554	316	57
Andrews, Fort, Mass	421	247	59
Apache, Fort, Ariz	132	26	20
Army and Navy General Hospital, Ark	68	31	45
Baker, Fort, Cal	373	233	62
Banks, Fort, Mass	249	147	59
Barrancas, Fort, Fla	523	181	35
Barry, Fort, Cal	196	82	42
Bayard, Fort, General Hospital, N. Mex	174	114	65
Benjamin Harrison, Fort, Ind	409	292	71
Bliss, Fort, Tex	316	309	98
Boise Barracks, Idaho	210	184	88
Brady, Fort, Mich	202	132	65
Casey, Fort, Wash	296	39	13
Caswell, Fort, N. C	314	128	41
Clark, Fort, Tex	306	177	58
Columbia, Fort, Wash	102	27	26
Constitution, Fort, N. H	132	49	38
Crockett, Fort, Tex	221	144	65
Crook, Fort, Nebr	475	351	74
Dade, Fort, Fla	208	82	39
D. A. Russell, Fort, Wyo	2,385	1,231	52
Davis, Fort, Alaska	133	127	95
De Russy, Fort, Hawaii	155	35	22
Des Moines, Fort, Iowa	385	232	60
Douglas, Fort, Utah	714	472	66
Duchesne, Fort, Utah	24	11	46
Du Pont, Fort, Del	522	218	42
Ethan Allen, Fort, Vt	825	384	47
Flager, Fort, Wash	295	201	68
George Wright, Fort, Wash	492	235	48
Gibbon, Fort, Alaska	152	97	64
Greble, Fort, R. I	308	141	46
Hamilton, Fort, N. Y	564	235	42
Hancock, Fort, N. Y	616	287	46
Henry Barracks, P. R	133	40	30
H. G. Wright, Fort, N. Y	598	272	45
Howard, Fort, Md	423	238	56
Huachuca, Fort, Ariz	446	323	72
Hunt, Fort, Va	112	90	80
Jackson Barracks, La	244	81	33
Jay, Fort, N. Y	299	199	67
Jefferson Barracks, Mo	1,318	439	33
Key West Barracks, Fla	133	48	36

[1] The following table does not include 1,894 cases tried at places where the statistics were not available for determining percentages.

Trials by summary courts—Continued.

Posts.	Average of enlisted strength present on last day of each month.	Total number of trials by summary courts during year.	Percentage of trials by summary courts during year.
Lawton, Fort, Wash	314	153	49
Leavenworth, Fort, Kans	1,440	581	40
Lincoln, Fort, N. Dak	251	102	41
Liscum, Fort, Alaska	127	36	28
Logan, Fort, Colo	622	238	38
Logan H. Roots, Fort, Ark	222	215	97
McHenry, Fort Md	114	49	43
McIntosh, Fort, Tex	223	159	71
Mackenzie, Fort, Wyo	529	273	52
McKinley, Fort, Me	690	329	48
McPherson, Fort, Ga	858	[1]301	[2]53
Madison Barracks, N. Y	382	247	65
Mason, Fort, Cal	120	47	38
Meade, Fort, S. Dak	173	139	80
Miley, Fort, Cal	116	108	93
Missoula, Fort, Mont	236	162	69
Monroe, Fort, Va	1,081	242	22
Morgan, Fort, Ala	415	302	73
Mott, Fort, N. J	209	89	43
Moultrie, Fort, S. C	443	191	43
Myer, Fort, Va	825	600	73
Niagara, Fort, N. Y	280	137	49
Oglethorpe, Fort, Ga	929	[1]302	[2]49
Omaha, Fort, Nebr	215	103	48
Ontario, Fort, N. Y	161	98	61
Panama Canal Zone	800	[3]401	[2]67
Plattsburg Barracks, N. Y	765	502	65
Porter, Fort, N. Y	257	130	51
Presidio of Monterey, Cal	799	565	71
Presidio of San Francisco, Cal	1,882	959	51
Presidio of San Francisco, Letterman General Hospital, Cal	217	200	92
Riley, Fort, Kans	1,674	995	59
Robinson, Fort, Nebr	536	294	55
Rock Island Arsenal, Ill	130	29	22
Rodman, Fort, Mass	131	53	40
Rosecrans, Fort, Cal	186	102	58
Ruger, Fort, Hawaii	188	134	71
St. Michael, Fort, Alaska	117	21	18
Sam Houston, Fort, Tex	1,340	1,096	82
San Juan, P. R	449	74	16
Schofield Barracks, Hawaii	1,793	768	43
Screven, Fort, Ga	440	174	40
Shafter, Fort, Hawaii	273	341	125
Sheridan, Fort, Ill	935	718	77
Sill, Fort, Okla	648	495	76
Snelling, Fort, Minn	672	446	66
Stevens, Fort, Oreg	282	141	50
Strong, Fort, Mass	315	210	67
Terry, Fort, N. Y	637	210	33
Totten, Fort, N. Y	762	368	48
Vancouver Barracks, Wash	1,182	596	50
Wadsworth, Fort, N. Y	237	201	85
Ward, Fort, Wash	102	55	54
Warren, Fort, Mass	217	67	31
Washington Barracks, D. C	625	266	43
Washington, Fort, Md	522	285	55
Wayne, Fort, Mich	499	231	46
Whipple Barracks, Ariz	161	150	93
Wm. Henry Harrison, Fort, Mont	281	139	49
Wm. H. Seward, Fort, Alaska	306	154	50
Williams, Fort, Me	538	309	57
Wood, Fort, N. Y	169	35	21
Worden, Fort, Wash	589	218	37
Yellowstone, Fort, Wyo	263	229	87
PHILIPPINE ISLANDS.			
Augur Barracks	1,053	688	65
Camp Avery	576	54	9
Camp Bumpus	120	21	17
Camp Connell	471	57	12
Camp Downes	284	131	46
Camp Eldridge	310	99	32
Camp Gregg	1,018	100	10
Camp John Hay	190	85	45
Camp Jossman	790	362	46
Camp Keithley	565	216	31
Camp McGrath	668	478	78
Camp Overton	200	152	76

[1] 8 months. [2] Partly estimated. [3] 9 months.

Trials by summary courts—Continued.

Posts.	Average of enlisted strength present on last day of each month.	Total number of trials by summary courts during year.	Percentage of trials by summary courts during year.
PHILIPPINE ISLANDS—continued.			
Camp Stotsenburg	1,004	401	40
Camp Wallace	193	38	20
Camp Ward Cheney	247	47	19
Camp Wilhelm	135	12	9
Cotobato	106	27	25
Dapitan	28	4	14
Davao	115	8	7
Fort Mills	959	123	12
Fort San Pedro	159	76	48
Fort Wm. McKinley	2,608	1,992	76
Fort Wint	218	78	36
Ipil	24	3	12
Isabela	36	3	8
Ludlow Barracks	565	231	41
Cuartel de España, Manila	565	273	48
Cuartel de Infantería, Manila	47	8	17
Division hospital, Manila	103	55	53
Ordnance depot, Manila	50	10	20
Momungan	52	8	15
Pettit Barracks	272	171	63
Puerto Princesa	164	11	7
Regan Barracks	298	60	20
Sengal	27	8	29
Siassi	72	21	29
Tientsin, China	926	335	36
Torrey Barracks	219	105	48
Warwick Barracks	470	392	83
Miscellaneous stations, camps, etc	495	137	28
Eastern division	20,650	9,699	47
Central division	20,941	11,195	58
Western division	14,377	7,387	51
Philippines division	16,402	7,237	44

The total number of summary court trials during the year was 37,412. This is an increase of 4,330 as compared with the last year. The number of trials by summary court this year was 45 per cent of the average enlisted strength of the Army, as against 43 per cent in 1911, 57 per cent in 1910, 64 per cent in 1909, and 69 per cent in 1908. The fact that there has been a rapid reduction in trials since 1908, and that the percentage has remained for two consecutive years under 50 per cent, indicates that the service is relying more upon the authorized company discipline. No suggestion, official or otherwise, has reached this office that the discipline of the Army has suffered in consequence. It is my opinion that the number of such trials could be still further reduced without impairing discipline, and it is quite certain that if enlarged powers of company discipline were placed in the hands of company commanders, the number of summary court trials would at once decidedly diminish. With this in view it has been provided in the new articles of war, now under consideration by Congress, that under such regulations as the President may prescribe the commanding officer of any detachment, company, or higher command may, for minor offenses not denied by the accused, and without the intervention of a court-martial, impose disciplinary punishment including admonition, reprimand, withholding privileges, extra fatigue, and restriction to certain specified limits, but not consisting of forfeiture of pay or confinement under guard.

In my last annual report I stated:

> It is recognized that the maintenance of proper discipline should be the chief aim, and that discipline does not necessarily improve with a reduction in trials, for the

reason that local conditions, the proportion of recruits in the command, etc., influence the necessity for trials; but, on the other hand, there can be no doubt that excellent discipline can frequently be maintained with few trials. Local commanding officers must be left some discretion. Steps are now being taken to obtain statistics as to the percentage of trials for the coming year at every post in the Army. In my opinion, it will be a check upon unnecessary trials to announce plainly that the War Department considers that the ultimate responsibility for summary court trials rests with post and regimental and not with company commanders.

The post statistics above set out exhibit a great difference in percentages, even as between posts in close proximity and presumably subject to similar conditions. If the statistics as to the number of trials in the several organizations at the same post were available, a similar decided difference would probably be found. These statistics show that the lowest percentage was at Fort Casey, Wash., and the highest at Fort Shafter, Hawaii, and that the percentages at posts in the Philippines were but 3 per cent less than for the Eastern Division. The percentages for large posts in the United States, where over 700 enlisted men are stationed, run from 42 to 87, the average for such posts being decidedly above the general average, while the percentage for Fort William McKinley, at which more enlisted men are stationed than at any other post, is 76. In Tientsin, China, the percentage is 36. In Alaska the percentages run from 18 to 95, and in the Hawaiian Islands from 22 to 125 per cent. The percentages from the posts around San Francisco Harbor are: Baker, 62; Barry, 42; Presidio, 51; Mason, 38; and Miley, 93. While local conditions, if known, would probably explain the reason for some of the difference in some cases, I am impressed with the belief that the personality of the organization, post, and regimental commanders will explain much. As stated in my last report, it will in my opinion be a check upon unnecessary trials to announce plainly that the War Department considers that the ultimate responsibility for summary court trials rests with post and regimental and not with company commanders. The fixing of such responsibility will, I believe, lead to a lowering of the above percentages.

DESERTION.

In the annual report of this office for 1910 it was said:

It has been found, however, that there has been a tendency to impose dishonorable discharge in nearly all cases of desertion, regardless of any mitigating circumstances. This tendency to mete out the extreme and degrading punishment of dishonorable discharge, even to young and inexperienced soldiers, who, it is quite certain, have failed to grasp the enormity of their offense in deserting will, if unchecked, draw the discipline of the Army farther and farther away from the trend, not only of modern criminology, but also, it is believed, from the modern trend of military discipline toward corrective, rather than merely punitive measures. It is recommended that the attention of department commanders be invited to this tendency with a view to corrective punishments without dishonorable discharge, not only of deserters but also of other offenders, in the cases of inexperienced soldiers where, in the opinion of the court, such punishment will probably have the effect of reforming the soldier. This would be in line with modern penology, and it would also be more just to a class of offenders who, by reason of their inexperience, were probably ignorant of the gravity of their offenses.

During the following year the War Department, in General Order No. 77, June 10, 1911, took occasion to announce clearly its policy as to the punishment for desertion in the following language:

2. It is the purpose of the new and modified order to secure more appropriate sentences in the cases of inexperienced soldiers who desert in the earlier periods of their enlistment contract, and in cases of soldiers who surrender themselves from desertion promptly or show a disposition to atone for the offense. It is expected that under

the revised order courts-martial will not in this class of cases generally award dishonorable discharge, but will award terms of confinement with forfeiture as a corrective punishment, giving the soldier an opportunity to return to the colors and redeem himself, to the end that the Government shall not be deprived of the services of one who, as the result of such corrective punishment, will probably become a good soldier.

3. The attention of reviewing authorities is particularly invited to the policy of dealing with desertion and deserters announced in this order, the ends of which can be attained only through their cooperation in the review of trials of this offense by courts-martial.

4. Nothing in this order will be construed by anyone concerned as in any way modifying the policy at present being pursued in the matter of the apprehension of deserters, nor should it influence either courts or reviewing authorities to leniency except in the classes of cases referred to in section 2 of this paragraph.

In reference to this announcement of policy I stated in my last annual report:

This makes plain to the service that the War Department expects that the custom heretofore established of dishonorably discharging a soldier for substantially every desertion shall be discontinued. Each case should be considered on its own merits. In order to learn whether this new policy is being carried out, and, if not, to locate the responsibility for its failure, the several division judge advocates are now gathering the current statistics as to punishment for desertion.

These statistics are as follows:

Tried for desertion	1,577
Tried for desertion but convicted of absence without leave only and retained in the service	414
Tried for desertion but convicted of absence without leave and dishonorably discharged	117
Convicted of desertion and not dishonorably discharged	98
Convicted of desertion and dishonorably discharged	944
Desertion cases in which it has been remarked that the sentence is inadequate or lenient	125
Desertion cases in which the sentence has been materially reduced or in which it has been remarked that the sentence is too severe	143

These statistics show that in 22 per cent of the cases, where the soldier has been charged with desertion but convicted of absence without leave only, he has been dishonorably discharged, and in 90 per cent of the cases, where convicted of desertion, dishonorable discharge has been imposed. They show that members of courts-martial and reviewing authorities believe that dishonorable discharge is the proper punishment for nine-tenths of the deserters. My own opinion is that a proportion of those discharged for desertion would redeem themselves if given the opportunity; just how large can not be determined until the experiment is tried. If Congress passes the desired legislation to enable the War Department to establish detention barracks, an opportunity will be given to determine the fact and shape our future policy on the fact and not on indefinite opinion.

The act of August 22, 1912 (Public No. 291), authorizing the reenlistment of deserters from the Army whenever reenlistment shall, in view of the deserter's subsequent good conduct, be authorized by the Secretary of War, is legislation which will assist the War Department in carrying out its declared policy of saving to the service such deserters as will probably become good soldiers.

MILITARY PRISONERS.

During the year important reforms have been instituted whereby the designation of persons sentenced to dismissal or dishonorable discharge with terms of confinement has been changed from "military

convicts" to "general prisoners," and whereby general prisoners serving sentence at a post may be paroled during working hours after serving one-half of the sentence.

By far the most important prison reform considered during the past year has been the establishment of detention barracks. The general purpose of such barracks is to provide a place of confinement for military offenders convicted of purely military offenses alone, or in connection with common law or statutory offenses not felonious in character. The general plan of such barracks requires the placing under military training those offenders whose conduct during confinement or detention has been such as to warrant the belief that upon completion of such a course of training they would be worthy of an honorable restoration to duty or of permission to reenlist, and with this in view the Secretary of War would be authorized to remit the unexecuted portion of the sentence of such prisoners. After a very careful personal investigation of the United States Military Prison at Fort Leavenworth and the prison at Fort Jay, an act looking to the conversion of the United States Military Prison at Fort Leavenworth into a United States military detention barracks has been prepared in this office and submitted to a committee of Congress.

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JURISDICTION OVER RESERVATIONS.

In the case of Fort Leavenworth Railroad Co. *v.* Lowe (114 U. S., 525) it was held that where a State is admitted into the Union without any stipulation for the retention by the United States of political authority, dominion, and legislative power over lands reserved within the State for military or other purposes of the United States, the State is admitted on an equal footing with the original States, and the United States retains over such reservations, after the admission, only the rights of an ordinary proprietor except as to such exemptions from State interference, by taxation or otherwise, as apply to property owned by the United States and held for public purposes. If the jurisdiction be thereafter ceded, it is subject to such conditions, not inconsistent with the effective use of the property for the purposes for which it is held, as the State may see fit to prescribe. Although the effect of the admission of a State without a stipulation for the retention by the United States of political jurisdiction was made clear by this decision, there has been no consistent effort made to have jurisdiction retained on the admission of new States. Of the States admitted since this decision, North Dakota, South Dakota, and Washington were admitted with constitutions which provided for the retention by the United States of jurisdiction over military reservations situated within those States; and the legislatures of the States of Washington and North Dakota have also passed comprehensive general acts of cession. Idaho, Montana, Utah, and Wyoming have passed more or less comprehensive general acts of cession, but the States of Oklahoma, Arizona, and New Mexico have neither any general act of cession nor any constitutional provision on the subject.

Aside from the militia target ranges, jurisdiction over which it is believed should be retained by the respective States, the United States has the following military reservations in the three States last mentioned, in respect to which jurisdiction has not been ceded:

1. In Oklahoma:
   Fort Reno, area of about 9,493 acres.
   Fort Sill, area of about 51,293 acres.
   Fort Gibson National Cemetery, area about 7 acres.
2. In Arizona:
   Fort Apache, area about 7,580 acres.
   Fort Huachuca, area about 70 square miles.
   Whipple Barracks, area about 1,732 acres.
   Whipple Barracks target range, area about 1,680 acres.
3. In New Mexico:
   Fort Bayard, area about 14,052 acres.
   Fort Wingate, area about 115 square miles.
   Fort Bliss target range, comprising all the public lands in two townships.
   Sante Fe National Cemetery, area about 9.44 acres.

It is the purpose of this office to prepare drafts of acts of cession and other papers required for the submission of the same to the governors of these States with a view to securing the passage of either general acts of cession or special acts covering the reservations therein.

Information has just been received that the draft of an act prepared by this office in 1910 for the cession of jurisdiction over the military reservation of Fort Oglethorpe, Ga., has been passed by the legislature of that State. The draft was originally transmitted to the governor by War Department letter of June 14, 1910, and, no action having been taken at the session which expired August 18, 1911, it was again submitted by letter of June 5, 1912, resulting, as stated above, in the passage of the same. No jurisdiction has yet been ceded over the Fort Oglethorpe target range in Catoosa County, Ga., area about 1,926 acres; nor over the Fort McPherson rifle range in Carroll and Haralson Counties, area about 1,271 acres

It is the purpose of this office to take up the matter of securing cessions of jurisdiction over these reservations and over any other reservations in respect to which the jurisdiction is wanting or is not of the character contemplated by section 355, Revised Statutes of the United States, and clause 17, section 8, article 1, of the Constitution of the United States. These contemplate that the jurisdiction shall be exclusive; and while the State, in making the cession, may properly reserve the right to serve civil and criminal process on the ceded lands, in respect to matters within the jurisdiction of the State any reservation of concurrent jurisdiction or retention of jurisdiction in respect to offenses committed, after the cession, on the ceded lands, would not give the United States such jurisdiction as is contemplated by the Constitution of the United States.

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E. H. CROWDER,
Judge Advocate General.

The SECRETARY OF WAR.

REPORT OF THE QUARTERMASTER GENERAL.

WAR DEPARTMENT,
OFFICE OF THE QUARTERMASTER GENERAL,
Washington, September 1, 1912.

SIR: I have the honor to submit the annual report of the operations of the Quartermaster's Department for the fiscal year ending June 30, 1912.

PERSONNEL.

On July 1, 1911, the personnel of the Quartermaster's Department comprised 126 commissioned officers, as follows:

Brigadier general	1
Colonels	8
Lieutenant colonels	12
Majors	27
Captains	78
Total	126

There are also 200 post quartermaster sergeants, 200 enlisted men of the Army general-service detachment, West Point, and 9,741 civilian employees distributed throughout the United States and its insular possessions.

Of the 27 majors 18 belong to the permanent corps; 9 majors and all of the captains are serving by detail.

During the fiscal year 1 colonel of the permanent establishment was retired and 3 majors died. Of the detailed majors, 5 were relieved—3 upon the availability of other majors, and 2 for the reason that they had less than two years' service with the command in which commissioned during the past six years. Of the detailed captains, 24 were relieved during the year—11 by expiration of detail, 8 for the reason that they had less than two years' service with the command in which commissioned during the past six years, 2 upon request, 2 by promotion to higher grade in the line, and 1 physically disqualified. The 8 vacancies in the list of majors, and the 25 vacancies in the list of captains, 1 of which existed at the beginning of the fiscal year, due to casualties among the permanent and detailed officers of the department, were filled by detail from the line of the Army, as provided by law.

In addition to the above force there were, on June 30, 1912, serving by assignment to duty as acting quartermasters, 13 officers of the line in the department in charge of construction work at various posts, as assistant to depot quartermaster and temporarily in charge of transport, and other quartermaster's duties. Of these 13 line officers, 10 were performing their line duties while acting quartermasters. There are 21 posts provided with officers of the Quartermaster's Department on duty as quartermasters.

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During the year 10 post quartermaster sergeants were retired, 3 discharged upon expiration of enlistment, 1 discharged by purchase, 1 discharged and privilege of reenlistment as post quartermaster sergeant denied, and 1 appointed an officer of the Philippines Scouts, making a total of 16 vacancies, 15 of which were filled by appointment from the line, 1 vacancy having occurred on June 28 and remained unfilled June 30, 1912.

NATIONAL CEMETERIES.

There are 83 national cemeteries. The appropriation for care and maintenance, including fuel for superintendents, pay of laborers and other employees, purchase of tools and materials, was $120,000. During the fiscal year there were 1,819 interments, the total at the close of the year being, known 212,264, unknown 151,861, grand total 364,125.

The buildings, drives, walks, walls, fences, monuments, etc., at the various national cemeteries have been kept in proper condition. The most important improvements were made at the following national cemeteries:

Cold Harbor, Va., construction of new outbuilding.
Danville, Va., extension of water and sewer system.
Fort Leavenworth, Kans., repairs to inclosing walls.
Fort McPherson, Ga., repairs to lodge and inclosing walls.
Hampton, Va., construction of new outbuilding.
Keokuk, Iowa, repairs to inclosing walls.
Memphis, Tenn., repairs to drives, walks, and drains.
New Albany, Ind., construction of water and sewer system.
Philadelphia, Pa., resetting, aligning, and cleaning headstones.
San Antonio, Tex., repairs to outbuildings and repairs to water and sewer system.
Shiloh, Tenn., construction of new frame toilet.
Springfield, Mo., repairs to inclosing walls and to drives.
Vicksburg, Miss., repairs to water and sewer system.

This appropriation is used also for the care of historic sites and the employment of caretakers and improvements of soldiers' lots reserved in private cemeteries for the interment of Federal soldiers, such sites and plats being owned by the United States.

Superintendents.—There are 76 superintendents of national cemeteries authorized by law, 7 of the national cemeteries being in charge of caretakers.

Government approach roadways.—There are 19 Government approach roadways to national cemeteries maintained from the annual appropriation (sundry civil act) of $12,000 for this purpose.

Extensive repairs were made to the Government approach roadways to the following national cemeteries:

Culpeper, Va., macadamized and treated with tarvia B, $1,765.
Fort Donelson, Tenn., construction of guttering and resurfacing with gravel, $570.
Springfield, Mo., resurfacing with gravel and chats and road oil binder, $7,058.

The remainder of the appropriation was expended in necessary repairs on the other roadways.

Post cemeteries.—Approximately $7,000 was expended in the care and maintenance of cemeteries at Army posts in the United States, Alaska, and Porto Rico, extensive repairs and improvements being made to those at Fort Crook, Nebr., Fort Niagara, N. Y., Fort Riley, Kans., and Fort Stevens, Oreg.

Fort Stevens was designated as the place of interment for all posts in the Artillery District of Columbia, and the remains from Fort Canby will be removed thereto.

The remains, Government headstones, and private monuments were removed from the cemetery at the abandoned military post of Fort Wingate, N. Mex., to the Santa Fe, N. Mex., National Cemetery, and contracts have been made for similar removals from the abandoned military posts at Fort Assinniboine, Mont., and Fort Duchesne, Utah, to the national cemeteries, respectively, at Custer Battlefield, Mont., and Santa Fe, N. Mex. The removals from these two last-named post cemeteries can not be effected, however, until the next fiscal year.

Headstones.—A contract was made for furnishing 20,000 regulation headstones at $2.50 each for marking the graves of Federal soldiers, sailors, and marines buried in national, post, city, town, and village cemeteries and for the graves of civilians buried in post cemeteries, under the annual appropriation of $75,000, provided for in the sundry civil act. There were 14,692 headstones shipped during the fiscal year.

Disposition of remains.—Under the annual appropriation of $57,500 the following disposition was made of the remains of officers and enlisted men who died on the active list, and of the remains of civilian employees of the Army in the employ of the War Department who died abroad or on Army transports, to wit:

Received at San Francisco, Cal., from abroad, including Alaska:		
Shipped home	53	
Delivered to relatives	21	
Interred in San Francisco National Cemetery	39	
Awaiting disposition July 1, 1912	36	
		149
Included in the above statement are the remains of 5 civilian employees, 25 civilians (not employees), and 17 remains handled for the Navy Department.		
Received at Seattle, Wash., from Alaska, and shipped home		5
Received at New York, N. Y., from Panama Canal Zone, 1 shipped home and 1 shipped to Arlington National Cemetery		2
In the United States;		
Drowned, not recovered	4	
Shipped home	175	
Interred in post or national cemeteries	113	
		292
Total		448

This act also provides for the removal to national cemeteries at Government expense of the remains of Federal soldiers, sailors, or marines interred in abandoned military posts, or in fields or abandoned private and city cemeteries. The following is a statement of remains so removed:

From—	To national cemetery at—	Number.
Hartsville, Tenn	Nashville, Tenn	9
Fort Brown, Tex., Military Reservation	Alexandria, Pineville, La	3,030
Fort Ringgold, Tex. (abandoned military post).	do	161
Altoona, Ga	Marietta, Ga	3
Shohola, Pa	Woodlawn, Elmira, N. Y	66
Yard of Mrs. S. F. Jenkins, 1323 Main Street, Fredericksburg, Va.	Fredericksburg, Va	1
James Island, Old Fort Johnson, S. C	Beaufort, S. C	16
Fort Wingate, N. Mex. (abandoned)	Santa Fe, N. Mex	155
Total		3,441

Interment of indigent soldiers.—Fifty-eight claims were settled under the act (sundry civil) making an annual appropriation of $3,000, one-half of which is payable by the District of Columbia for the burial in Arlington National Cemetery or in the cemeteries of the District of Columbia of indigent ex-soldiers, ex-sailors, or ex-marines of the United States service, either regular or volunteer, who have been honorably discharged or retired and who die in the District of Columbia. Not exceeding $45 is allowed in each case,

exclusive of the cost of the grave. Eleven claims for burial expenses under this act were rejected and two are awaiting settlement.

Miscellaneous.—A tract comprising 2.13 acres at the extreme southern part of the Gettysburg, Pa., National Cemetery was on November 20, 1911, transferred by the Secretary of War from the control of the War Department to the jurisdiction of the Gettysburg National Park Commission for the site of the Lincoln Memorial, the erection of which was authorized by act of Congress February 11, 1895.

The work of making a card record of interments in all national cemeteries begun last fiscal year was continued, and cards written and filed in this office for the following national cemeteries: Baton Rouge, La.; Battleground, D. C.; Beverly, N. J.; Camp Butler, Ill.; Camp Nelson, Ky.; Cave Hill, Ky.; Cold Harbor, Va.; Culpeper, Va.; Cypress Hills, Brooklyn, N. Y.; Hampton, Va.; Mill Springs, Ky.; Quincy, Ill., and Vicksburg, Miss.

The remains of 65 sailors recovered from the wreck of the U. S. battleship *Maine* in Havana Harbor were placed in caskets and forwarded on the U. S. S. *Birmingham* to the Arlington, Va., National Cemetery, where interment was made with military honors in the *Maine* section on March 23, 1912. The remains of Lieut. Darwin Merritt, United States Navy, which were recovered at the same time, were shipped to his home in Red Oak, Iowa.

Following is a statement showing the disposition of the remains of the officers and enlisted men who were killed or who died of wounds received in the explosion of the U. S. battleship *Maine* at Havana Harbor February 15, 1898:

Buried at Havana (including 7 who died of wounds immediately after the explosion) and removed to Arlington in December, 1899	[1] 165
Buried at Key West, Fla.	19
Buried at Pittsburgh, Pa.	1
Buried at Annapolis, Md.	1
Buried at Red Oaks, Iowa	1
Buried in Arlington March 23, 1912	65
Total remains accounted for	252
Survivors	94
Remains unaccounted for	9
Total crew	355

Of the 229 remains interred at Arlington there are 167 unknown and 62 known, the latter comprising 59 sailors and 3 marines.

In pursuance of the provisions of the act of Congress approved March 9, 1906, providing for the locating and marking of the graves of the soldiers and sailors of the Confederate Army and Navy who died in Federal prisons and military hospitals at the North and the making of burial registers in connection therewith, the commissioner for marking graves of Confederate dead has furnished this office with registers of Confederate dead interred in the Allegheny Cemetery at Pittsburgh, Pa., the Forest Hill Cemetery at Madison, Ill., and the following national cemeteries: Annapolis, Md., Camp Butler, Ill., Cave Hill, at Louisville, Ky., Cypress Hills, at Brooklyn, N. Y., Fort Leavenworth, Kans., Fort Scott, Kans., Jefferson Barracks, Mo., Keokuk, Iowa, Mound City, Ill., Rock Island, Ill., and Santa

[1] One of these remains, after removal to Arlington, was disinterred and shipped to Indianapolis, Ind.

Fe, N. Mex. Central monuments bearing bronze tablets inscribed with the names of soldiers buried in unidentified graves have also been erected in the following cemeteries, viz, Woodlawn National Cemetery at Elmira, N. Y., Philadelphia, Pa., National Cemetery, Oak Woods Cemetery (Confederate Mound) at Chicago, Ill., Louden Park National Cemetery at Baltimore, Md., and Finn's Point National Cemetery at Salem, N. J.

On account of the length of time which has elapsed since the construction of many of the lodges and outbuildings at national cemeteries and the consequent deterioration of these buildings, many of which have been standing since the cemeteries were first established, and the constantly increasing cost of labor and material, the annual appropriation of $120,000 for the care and maintenance of national cemeteries is not sufficient to meet the urgent demands which have been and are now being made upon the department. It has therefore become necessary to defer action, from year to year, on important construction work and improvements.

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Reduction of cost.—The expenditures of the Quartermaster's Department for all purposes for the fiscal year 1912, were $4,541,313 less than for the fiscal year 1911, and $10,042,901.32 less than for the fiscal year 1910, made up as follows:

	Appropriations, fiscal year 1912.	Expenditures.	
		Fiscal year 1911.	Fiscal year 1910.
Regular supplies	$8,023,314.03	$8,173,596.55	$9,177,807.17
Equipment, officers' schools	9,142.12	9,717.67	11,071.65
Incidental expenses	1,968,078.36	2,075,652.66	1,806,653.84
Horses, Cavalry, Artillery, and Engineers	317,038.50	443,527.15	496,334.62
Barracks and quarters	1,624,891.84	1,547,930.71	3,447,578.40
Military post exchanges	38,632.07	69,221.05	190,656.60
Army transportation	10,843,600.85	11,720,670.97	12,362,449.10
Roads and walks	440,456.02	851,531.19	1,085,415.64
Water and sewers	2,068,206.65	2,541,710.29	2,784,871.47
Maintenance, Army War College	11,894.58	11,803.42	12,593.38
Clothing and equipage	4,953,567.59	7,394,773.95	8,966,292.06
Total	30,298,822.61	34,840,135.61	40,341,723.93

The reduction in expenditures stated herein was due to reduction in cost of current requirements and to reduced appropriations for new construction and betterments.

Expenditures on account of current requirements in the fiscal year 1912 were $426,938.32 less than in fiscal year 1911 and $495,130.88 less than in fiscal year 1910.

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SUPPLIES.

Field supply depots.—Steps have been taken during the fiscal year for the completion of field supply depot No. 1 located at the Philadelphia depot of this department, and the quantities of all the articles of clothing and equipage given on the standard list furnished this office by the General Staff have been placed therein, or contracts have been let and manufactures authorized for such quantity of those articles as were not completed at the end of the fiscal year.

In view of the lack of space at the Philadelphia depot, instructions were given the depot quartermaster, at Jeffersonville, to hold articles of field transportation at the Jeffersonville depot until such time as there is sufficient storage space available at the Philadelphia depot.

Test of wagons.—During the fiscal year a test was conducted by a provisional regiment of infantry at Dubuque, Iowa, for the purpose of observing and studying all articles of equipment and transportation supplied by the Quartermaster's Department. Among the equipment tested were three sample wagons made by well-known wagon manufacturers, conforming to recommendations of the infantry equipment board. A standard escort wagon and a 6-mule army wagon were also supplied for this test from the Jeffersonville depot, and a wagon designated as the "Purcell" wagon was sent from Fort Riley, Kans. A device for testing the "pull" of the different wagons to determine the animal power required to operate them, was also furnished. As the test was not concluded before the close of the fiscal year, no report was received as to the result of these tests. This report, however, will be treated on in the next annual report.

Test of automobile trucks.—A test was conducted by this department with motor trucks during the latter part of this fiscal year, for the purpose of determining whether motor trucks, as at present constructed, can be used in the Army in place of animal-drawn transportation. A trip was made from Washington, D. C., to Fort Benjamin Harrison, Ind., under the supervision of Capt. A. E. Williams, United States Army.

The run was made with a White truck of 1½-ton capacity and a four-wheel drive truck of 2,000-pounds capacity. These were Government-owned trucks. An autocar of 1½-ton capacity, which was put in the run by the factory, also made the trip.

All kind of road conditions were encountered, and the trucks were put to the severest test. The distance traveled was approximately 1,524 miles, and the time about 48 days.

While no definite conclusions were reached, it is not believed that the present type of automobile truck will meet all requirements of the Army, and it is contemplated making further tests during the fiscal year 1913, at various maneuver camps, with a view to ascertaining whether a standard type of automobile truck can be manufactured that will be satisfactory as a means of transportation.

During the fiscal year 9 motor trucks were purchased for use at various quartermaster's depots, and 7 were purchased for use in the Philippine Islands. By the supply of these motor trucks the animal-drawn transportation has been reduced to a considerable extent at the places to which they were supplied.

Issues to the militia.—Miscellaneous supplies to the value of $108,270.68 were issued to the organized militia during the fiscal year under authority of statutes providing for such issues. The department appropriations are reimbursed this cost from the militia appropriations. No gratuitous issues of supplies were made to the organized militia of the District of Columbia.

Telephones.—During the fiscal year 1912 the rental of telephones cost $29,735.30.

Mineral oil.—Purchases of mineral oil for lighting purposes, except for the Philippine Islands, were made at an aggregate cost of $46,677.30, average cost of $0.1088 per gallon, as compared with $0.138 per gallon for the fiscal year 1911. The reduction in cost

is due to making purchases for delivery in carload lots at transportation centers, and in barrels and bulk where practicable. The reduction in cost of mineral oil resulted in a saving of $22,027.92, as compared with cost of mineral oil for the fiscal year 1911.

The following mineral oil and gasoline was purchased, except for the Philippine Islands, during the year at prices stated:

	Gallons.	Cost.	Average cost.
Mineral oil	429,059	$46,677.30	$0.1088
Gasoline	250	25.00	.10
		46,702.30	

Forage.—There were purchased during the fiscal year 286,085,879 pounds of forage, including bedding, at a cost of $3,093,752.67, being an average cost of $1.0814 per 100 pounds. In addition there were purchased 155,858 pounds of dog food at a cost of $12,539.81, being an average cost of $8.0456 per 100 pounds. This includes also the forage used in the Philippine Islands, Alaska, Hawaiian Islands, and Porto Rico, except the forage and bedding purchased in the Philippine Islands.

Fuel.—During the fiscal year 1912 fuel for vessels of all kinds cost $22,195.69 less than for the same purpose for the fiscal year 1911, due to the fact that the *Dix* did not make as many trips, and a greater quantity of fuel oil was used for harbor boats on the Pacific coast.

During the fiscal year 1912 fuel for all purposes, except vessels, cost $2,000,354.80 as against $2,199,989.66 for the fiscal year 1911, a saving of $199,634.86, of which $182,899.32 was made on anthracite and bituminous coal, the greater part of which is due to the fact that lower prices were paid for coal during the fiscal year 1912 than during the fiscal year 1911.

Fuel oil.—The most important project that has come to the attention of this office during the fiscal year is that in connection with the use of fuel oil in barracks and quarters at posts on the Pacific coast. During the fiscal year 1912 the constructing quartermaster, Fort Mason, Cal., carried out certain tests in connection with two systems of oil burning in two of the new barracks at Fort Winfield Scott. Preliminary reports of these tests have been submitted, and the results shown indicate that 70 per cent savings in fuel can be made by the use of fuel oil. If this is the case, an annual saving in dollars and cents for the Government at the Presidio of San Francisco, Cal., Fort Winfield Scott, and Letterman General Hospital of approximately $32,000 will be realized. The installation of these burners does not require the modification of the heating and cooking apparatus to be such that it can not with slight change be put back for the use of coal, and steps will be taken to investigate the advisability of the use of fuel oil at all posts on the Pacific coast.

CLOTHING.

The duties of the clothing branch pertain to all matters having reference to the purchase, manufacture, and issue of all articles of clothing and equipage required by the Army and militia of the States and Territories; also the carrying into effect of such changes and

improvements in the various articles as may be determined by higher authority from time to time and which involve changes in and the adoption of standard samples and specifications to govern in the procurement of the clothing and equipage supplies.

FINANCIAL.

Appropriation by Congress for the purchase and manufacture of clothing and equipage for the fiscal year ending June 30, 1912	$4,901,271.67
Credits on account of issue of clothing and equipage supplies to the militia of the States and Territories and the District of Columbia during the fiscal year 1911–12, for which the appropriation has been or will hereafter be reimbursed	1,200,927.73
Deposits from all other sources, consisting of sales of all kinds and credits from the Pay Department of collections from enlisted men on account of clothing drawn in excess of established allowances	274,829.54
Total	6,377,028.94

The following data has been furnished this office by the Paymaster General of the Army, at the request of the Quartermaster General, showing collections from and disbursements to the enlisted men of the Army, in settling their clothing accounts, viz:

Collections on account of clothing drawn in excess of established allowances:	
Appropriation 1911—	
From Apr. 1, 1911, to June 30, 1911	$5,544.16
From July 1, 1911, to Apr. 1, 1912	40,569.67
Total	46,113.83
Appropriation 1912—	
From July 1, 1911, to Mar. 31, 1912	69,259.78
Total collections	115,373.61
Payments to enlisted men at time of discharge from service on account of clothing undrawn:	
Appropriation 1911—	
From Apr. 1, 1911, to June 30, 1911	369,011.64
From July 1, 1911, to Apr. 1, 1912	16,900.96
Total	385,912.60
Appropriation 1912—	
From July 1, 1911, to Mar. 31, 1912	1,008,794.01
Total expenditures	1,394,706.61

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Sales of clothing and equipage to various departments and bureaus of the Government.

United States Soldiers' Home	$17,739.30
Navy Department	4,697.99
Treasury Department	3,098.87
Marine Corps	1,597.92
Interior Department	902.50
Subsistence Department	813.13
Department of Agriculture	490.69
United States Geological Survey	164.95
Signal Corps	135.73
Engineer Department	106.48
Superintendent State, War, and Navy Building	74.00
Isthmian Canal Commission	61.04
Supply Division, War Department	27.72
Bureau of Insular Affairs	19.50
Medical Department	2.65
Total	29,932.47

Sales at auction. The sum realized at the several purchasing and manufacturing depots of the Quartermaster's Department during the fiscal year ending June 30, 1912, for the sale of condemned articles of clothing and equipage supplies, cuttings, etc., amounted to $20,926.25. The expenses involved in making these sales were $124.35, leaving a surplus of $20,801.90, which, under existing law, was covered into the Treasury of the United States and credited to miscellaneous receipts.

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Sales of buffalo overcoats.—There were on hand at the Omaha depot on July 1, 1911, 4,464 buffalo overcoats, which were purchased at a time when the buffalo existed in great numbers and were issued to and worn by troops during the several Indian campaigns in the Northwest up to 1891. Since that time the department has carefully preserved and stored these coats.

In a report of inspection of the Omaha depot, made by Maj. Omar Bundy, inspector general, United States Army, the advisability of selling these coats was brought to the attention of the Quartermaster General, who on August 24 last submitted the matter to the Secretary of War, stating that should it be deemed advisable to sell some of the coats the proper season was then at hand for obtaining the best prices, especially if sold under sealed bids after wide public notice.

Authority was granted to sell such number of coats as could, in small lots, be advantageously disposed of. A limited number of these coats were sold to the highest bidders by the quartermasters on duty at Seattle, Wash., St. Paul, Minn., Chicago, Ill., Philadelphia, New York, Boston, St. Louis, Washington, D. C., and Omaha, Nebr., after inviting proposals by circular letter. Two hundred and ninety-four of the coats were thus disposed of, realizing the total sum of $10,056.70, an average of $34.21 per coat.

It is recommended, however, that sales of the remaining buffalo coats be discontinued, it having been found that they can be made use of by troops stationed in Alaska, recommendation to this effect having been made by the board of officers convened to determine upon the proper clothing to be hereafter issued to troops stationed in Alaska.

Clothing and equipage supplies purchased for special use of troops stationed in Alaska. The following articles were purchased at the San Francisco depot during the fiscal year for special issue to troops stationed in Alaska, all at a total cost of $42,657.62:

Rubber hip boots, pairs	1,100
Improved fur caps	900
Mackinaw coats	700
Oilskin coats	100
Drawers, fleece-lined, pairs	3,000
Pea jackets, kersey-lined	600
Moccasins, pairs	700
Buckskin mittens, pairs	900
Fur mittens, pairs	1,500
Felt shoes, pairs	3,750
German socks, pairs	1,700
Mackinaw trousers, pairs	1,800
Canvas trousers, kersey-lined, pairs	1,750
Oilskin trousers, pairs	100
Undershirts, wool	3,850

White cork helmets.—Prior to the Spanish-American War the troops stationed at southern posts were furnished with white cork

helmets. With the adoption of the khaki cotton service uniform it was found impracticable to dispose of them by issue, khaki-colored cork helmets having taken their place. Twenty-six thousand three hundred and three of these white helmets were kept in store at the Jeffersonville depot in case an opportunity should offer to issue them to troops in tropical countries.

A recommendation was made to issue them to troops in the Philippines, but this office was informed that the Secretary of War did not approve of the wearing of the white helmet with the service uniform, and authorized the disposition of the same by sale.

The depot quartermaster at Jeffersonville, Ind.. was thereupon directed to invite bids by circular letter and to sell the helmets to the highest bidder under sealed proposals, which has since been accomplished, the sum of $1,333 being realized.

Gratuitous issues to the Militia of the District of Columbia.—There were gratuitously issued to the Militia of the District of Columbia during the last fiscal year under the act of Congress of March 1, 1889, upon requisitions approved by the Secretary of War, clothing and equipage supplies to the value of $10,901.97, for which the appropriation for clothing and equipage has not been reimbursed.

The act of Congress provides as follows:

> That the uniforms, arms, and equipments of the National Guard shall be the same as prescribed and furnished to the Army of the United States. Every organization of the National Guard shall be provided with such ordnance and ordnance stores, clothing, camp and garrison equipage, quartermaster's stores, medical supplies, and other military stores as may be necessary for the proper training and instruction of the force and for the proper performance of the duties required under this act.
>
> Such property shall be issued from the stores and supplies appropriated for the use of the Army, upon the approval and by direction of the Secretary of War, to the commanding general upon his requisition for the same. * * *

Since the passage of the act there has been issued to the commanding general of the District of Columbia Militia, from supplies procured for the Army, up to and including June 30, 1912, clothing and equipage supplies to the value of $283,041.87, which amount has been a total loss to this department. As such issues involve a totally unnecessary and unreasonable drain on the annual appropriations for the support of the Regular Army and for which no provision has up to the present time been made by Congress, the matter was brought to the attention of the Secretary of War, who directed that, inasmuch as it was evident that demands will be made from time to time, it was considered advisable that the annual estimates should contain an estimate of not to exceed $8,000 for these supplies, so that such demands as are made can be met without unduly drawing upon the supplies for the regular establishment or the reserve depots. In view of the fact, however, that this amount will not be available, if appropriated, until after July 1, 1913 (fiscal year 1914), it is recommended that action be taken with a view to reducing such issues during the fiscal year 1913, to the lowest practicable limit, as the estimates submitted for the fiscal year 1913 were based upon the minimum requirements for the Regular Army for that year.

Olive-drab cotton uniform.—The issue of the olive-drab cotton service uniform to the service was begun during the present summer (fourth quarter, fiscal year 1912). Prior to its general issue, however, one company of the Seventeenth Infantry was equipped therewith for wear and test to determine the relative serviceability of two

different weights of the cloth, the standard 6½ ounce and a 5½ ounce fabric. During the duration of the maneuver camp at San Antonio, Tex., the uniforms were worn from July to October, 1911, but the wearing qualities of both fabrics were so equal during the time that they were worn that no definite conclusion could be arrived at as to their relative wearing qualities. The report of the company commander, concurred in by the regimental commander, was to the effect that these uniforms, both as to pattern and fabric, were very satisfactory and much superior to the khaki cotton service uniform, formerly the standard for the Army.

In order that the olive-drab cotton cloth may be made more commercial and competition for its manufacture increased, samples of both "piece" and "fiber" dyed material of one color in warp and filling were requested and obtained. These were made up into breeches and issued to enlisted men of one company of the Twenty-seventh Infantry, forming part of the Provisional Regiment of Infantry on its march from Dubuque, Iowa, to Sparta, Wis., in order that the material might be subjected to a service test with a view to obtaining data as to the relative fastness of the two dyes (fiber and piece) and the wearing qualities of the different fabrics under service conditions. It is hoped that sufficient data will be obtained from this test to enable this office to make definite recommendations concerning the advisability of so amending existing specifications for olive-drab cotton cloth as to admit of the acceptance of "piece" as well as a "fiber" dyed fabric or at least to admit of the substitution of a single-color fabric for the two-color cloth (brown warp and green filling) now the standard.

Khaki clothing.—Owing to the exhaustion of certain sizes of the khaki cotton service coats and breeches, foot and mounted, there has resulted a mixture of the olive-drab cotton service and khaki cotton service uniforms throughout the service and at some posts even among men of the same organizations. This mixture, however, was unavoidable in view of the necessity of exhausting the stock of the khaki clothing in all sizes, as far as possible, prior to the issue of the olive-drab cotton service uniform. This, also, in order to carry out the provisions of paragraph 4, General Order 129, War Department, 1911.

In view of the fact that there will undoubtedly be a large number of khaki garments, coats and breeches, of various sizes still on hand at the end of the present warm season and available for issue next summer, it is recommended that in order to avoid another mixture of uniforms throughout the service, the khaki garments in the United States be collected and shipped to the San Francisco depot and issued exclusively to troops stationed in the Department of Hawaii. While there will probably be a mixture of the two uniforms in that department, nevertheless, the undersigned believes that it will be far more desirable to limit the mixture to one department or locality than to have a scattering of the various uniforms throughout the entire service and in many localities.

Discontinuance of the issue of dark-blue blouses to the Coast Artillery.—At the time of the adoption of the olive-drab service clothing, there remained on hand a large number of dark-blue blouses which it was decided should be exclusively issued to the enlisted men of the Coast Artillery until exhausted. The supply of the large sizes having been

reduced to such an extent as to render it impossible to further continue issuing these blouses, the Quartermaster General, on November 3, 1911, submitted to the Chief of Staff a statement showing the status of the available stock in order that the question as to the continuance of the issue of this clothing to the Coast Artillery might be decided. The Secretary of War directed that the issue of blouses be discontinued and that olive-drab woolen and cotton service clothing be furnished to the Coast Artillery after the expiration of the third quarter, fiscal year 1912. Instructions to that effect were issued by The Adjutant General of the Army, and the clothing referred to has been furnished accordingly.

Change in the manner of issuing blankets to enlisted men.—Under decision of the Secretary of War of May 3, 1911, and the provisions of War Department General Orders No. 67, May 25, 1911, blankets are issued on memorandum receipt to company and detachment commanders for use of the men of their commands.

On December 9, 1911, the Chief of Staff directed that he be furnished with a statement of the savings that could be made by the Government owning the blankets and issuing them to the enlisted men on memorandum receipt, to which reply was made by the Quartermaster General on December 11, 1911, that it would be impossible to give an accurate statement owing to the fact that this method of issue has been in force less than six months, but that it may be assumed that the saving would be about $60,000 per annum. This estimate is based upon the discharge annually of 25,000 enlisted men whose blankets represent a value of $87,500. Allowing $10,000 for cleaning and renovation, $14,850 for yearly depreciation of one-sixth in value, and $2,920 for losses through unavoidable causes, the saving $60,000 is obtained.

On the 4th of January, 1912, the Quartermaster General submitted a report that in view of the fact that the blankets issued under War Department General Orders No. 67 of May 25, 1911, were the property of the United States and that those issued prior to July 1, 1911, were charged against the clothing accounts of the men, the department stood ready to purchase them as equipage and recommended that the opinion of the Judge Advocate General be obtained first, as to whether or not there were any legal objections to the department purchasing an article in which it already has, under former opinions, an equity share; second, as to whether the money can legally be paid direct to the soldier for an article that has been issued to him and the value of which has been charged against his clothing allowance.

Upon reference to the Judge Advocate General of the Army, that officer expressed the opinion that there was no objection to taking up blankets issued to the men as a part of their clothing allowance, provided a corresponding credit was given in the soldiers' clothing accounts to be finally adjusted upon discharge from the service.

This opinion was approved by the Secretary of War on January 12, 1912.

After further and careful consideration the Quartermaster General by direction of the Secretary of War submitted the matter to the Comptroller of the Treasury for decision as to whether or not the transfer of the necessary funds from the appropriation "Clothing and camp and garrison equipage" act of March 3, 1911, could be made to the appropriation "Pay, miscellaneous" under the same act "for

clothing not drawn due to enlisted men on discharge," these transfers to be made periodically on statements from the Pay Department, showing actual expenditures of that department for "clothing not drawn, due to enlisted men on discharge," the appropriation "Clothing and equipage" being called upon to reimburse the pay appropriation for all the amounts that have been paid to enlisted men as a result of crediting the value of the blankets on their clothing accounts.

On the 5th of February, 1912, the assistant comptroller decided that he could see no legal objection to the plan outlined but that, in carrying out the plan, the final statements of a soldier should show the value of the blanket received by him.

After consultation with the Paymaster General of the Army the following was embodied in the Annual Price List of Clothing and Equipage, published in Quartermster General's Circular No. 10, c. s.:

Blankets in the hands of enlisted men on July 1, 1912, which have been issued to them and charged against their clothing accounts, up to and including two for each soldier, will, on that date, become the property of the United States, and for each serviceable blanket so turned over, to the number indicated, a credit of $2.86 will be given on the clothing account of each soldier from whom the blanket or blankets are purchased. Blankets which, in the opinion of company or detachment commanders, are unfit for service should be submitted to the action of a surveying officer with a view to determining the advisability of purchase. The final statements of enlisted men who have thus been credited will, if they show a balance due for clothing not drawn in kind, contain notation in the space provided for remarks, "Clothing account credited July 1, 1912, with $....., for ..... blankets purchased under the provisions of Circular No. 10, War Department, Office of the Quartermaster General, 1912." The same course will be pursued in stating final accounts on pay rolls of soldiers who are not furnished with final statements on discharge and of deserters. This notation is required for the sole purpose of enabling the department to make appropriation transfers as authorized by the decision of the Comptroller of the Treasury, dated February 5, 1912, and is not to be construed as constituting an additional credit due the soldier for clothing not drawn in kind. Company or detachment commanders receiving these blankets will furnish the post or other quartermaster with certificates, in duplicates, showing the number of same, and the quartermaster will, upon receipt of such certificates, take up on his property account the number of blankets indicated, obtaining the company or detachment commander's receipt for same. The certificate of the company or detachment commander will constitute the quartermaster's voucher for assuming accountability.

Change in the manner of issuing overcoats to enlisted men.—In compliance with a memorandum from the Chief of Staff, dated February 14, 1912, in which the Secretary of War directed that the question of the advisability of issuing overcoats on memorandum receipt be submitted to the Quartermaster General for comment and suggestions as to the best detailed solution of the general idea involved, this office, in order to determine the feasibility of cleaning, renovating, and repairing overcoats, directed the depot quartermaster at Philadelphia, Pa., to experiment with overcoats that have been turned in as deserters' clothing and have them cleaned, renovated, repaired, pressed, and placed in a condition fit for reissue.

From samples forwarded, this office came to the conclusion that the results accomplished were of such a character, both as to serviceability and presentability, as to warrant the belief that reissue of a large number of these coats was feasible.

It was reported that the cleaning and repairing of these coats could be accomplished at about $1.50 each.

On March 28, 1912, the Quartermaster General submitted a report to the Chief of Staff giving the result of his investigation, quoted above, and stated that the overcoat being a garment the least worn

by a soldier, it would, if properly cared for, last on an average of about 6 years; therefore, the consideration of its reissue to the soldier, the Government retaining title for the same, was sufficiently important and feasible to warrant a trial to determine its desirability. Considering all the facts in the matter, the Quartermaster General recommended that commencing July 1, 1912, the reissue of overcoats be given a trial to determine what, if any, would be the objections thereto and whether or not garments would give such service as would warrant their reissue, and further, that all overcoats be hereafter issued on memorandum receipts to organization commanders as equipage, at the rate of one to each soldier enlisting on or after that date, or reenlisting on or after that date and not already so provided; same to be turned in to this department to be renovated upon discharge of the soldier, this method to continue in force during the fiscal year 1913, and to be discontinued thereafter, or sooner if found desirable.

On March 30, 1912, the Chief of Staff approved the recommendation of the Quartermaster General, as indicated above, and directed that provisions be made for such issue in the draft of the next clothing order.

In preparing the Annual Price List of Clothing and Equipage for the fiscal year 1913, published in Quartermaster General's Circular No. 10, April 6, 1912, the following provision was made, viz:

> Overcoats will be issued on memorandum receipt to company and detachment commanders for the use of the men of their commands, the issue to be limited to one to each man for the authorized strength of the organization. When turned in they will be accumulated at posts in sufficient quantities to warrant shipments by freight, and will be shipped to the depot quartermaster, Philadelphia, for necessary renovation and repair before reissue.

Instructions have been given to hereafter stamp indelibly with the letters "U. S." each overcoat issued by this department, thus indicating that the same is the property of the Government.

Taking into consideration that the original cost of an overcoat is $12.38, it is believed that a saving to the appropriations for clothing the Army will result after the system shall have been carried into effect.

Shelter-tent material.—On April 10, 1912, this office, in a memorandum to the Chief of Staff submitted for the consideration of the Secretary of War, the fact that since approval of the recommendation of the reports of the Infantry and Cavalry equipment boards with reference to the character of material to be used in the shelter tent this department had entered into contracts for waterproofing sheeting for use in the shelter tents in conformity with the recommendations of the boards above referred to.

The specifications for this waterproofing material require that it be free from spontaneous combustion. In spite of the fact, however, that the depot quartermaster, Philadelphia, where this material is delivered, had exercised the utmost care in making the most careful tests to prevent any possibility of accepting material that was liable to spontaneous combustion, nevertheless there were marked indications, and at various times it was discovered that there was liability of spontaneous combustion.

When this material is procured in such large quantities as would be required for shelter tents, ponchos, and slickers, no matter how rigid

and careful the test may be applied, the danger of spontaneous combustion can not, with certainty, be eliminated. It was, therefore, recommended, in view of the unreliability of this material, that no more shelter tents be manufactured from it, its use being limited to the manufacture of ponchos and slickers, and that in the future shelter tents be manufactured of material the same or similar to that used prior to the adoption of the waterproof sheeting. This material to be either an olive drab or khaki color as may be directed by the Secretary of War, preferably the olive drab, it being the understanding, however, that the style of tents, as approved by the Secretary of War, for mounted and dismounted troops be not changed and that this office be authorized to submit samples of water-repellent cloth, not to exceed in weight the material recommended by the infantry equipment board, i. e., 8 ounces per yard. These recommendations were approved by the Secretary of War under date of April 16, 1912, and the manufacture of shelter tents of this material ceased on that date, but in view of the large quantity of 7½-ounce duck (the material formerly used for the manufacture of shelter tents) on hand the manufacture of the shelter tents of this material for dismounted troops was continued. There is sufficient of this material now on hand to enable manufactures to continue for some months. In the mean time this office has been endeavoring to secure samples of a light duck or twill of an olive drab color to use in the manufacture of shelter tents when the 7½ ounce duck, now being used, has been exhausted.

Satisfactory samples have been received and the possibility of the manufacture of the cloth, as represented by these samples, in large quantities will be investigated prior to recommending the adoption of any one fabric. When final steps have been taken by this office in this matter the samples recommended for adoption will be submitted for consideration of the Secretary of War.

Tentage.—In conformity with recommendations submitted by the commanding officer, Seventeenth Infantry (Col. J. T. Van Orsdale) while his regiment formed part of the maneuver division at San Antonio, Tex., there was manufactured by this department two pyramidal tents, approximately corresponding in size to the wall tents issued for use of officers in the field and called pyramidal wall tents, for trial and comparison with the regulation wall tents now issued to the service. These tents were submitted for trial during the maneuver camp, and from the reports received, it was apparent that these tents, with certain modifications, would be superior to the regulation wall tents.

Another tent was therefore manufactured conforming to the general pattern of the first two, but containing the modifications suggested, as a result of the first test. This tent was sent to the commanding officer Seventeenth Infantry, in January, 1912, for further trial and report. On June 4, 1912, a report in favor of the adoption of this tent in lieu of the wall tent was received. The Quartermaster General therefore, recommended to the Secretary of War the adoption of the pyramidal wall tent in lieu of the present issue wall and common tents, the issue of this tent to the service to begin as soon as the wall and common tents now on hand in depots were exhausted. On June 20, 1912, the Secretary of War approved these recommendations. Steps are now being taken to carry the foregoing into effect.

In general, the following may be stated as the principal points of superiority of the pyramidal wall tent over the wall and common tents:

1. Ease to pitch, one man being able to do it alone, if necessary.
2. Very stable in the wind.
3. One pole required instead of three.
4. Opening at top always available for stovepipe.
5. Less liable to be torn by the high winds, the exposed surface being somewhat smaller and of better shape to resist.
6. Cooler than the regulation wall tent.
7. Is slightly larger than the regulation wall tent and therefore can furnish accommodations for 3 officers in the field as required by existing field service regulations.

The adoption of this tent has opened the way for further steps looking toward a reduction in the number of kinds of tents now issued to the service and a standardization of all tentage. The pyramidal wall tent above referred to will use the same chains, tent squares, ropes, weight of canvas and tent slips as the pyramidal tent adopted July 14, 1911, now being issued to troops.

This office is now making experiments looking toward the substitution of the pyramidal tent for the present hospital tent for use of field bakeries and field hospitals. It may be necessary to make some slight modifications in the pyramidal tent, such as increasing the height of the wall, to make it suitable for these two purposes, but it is confidently believed, that with this modification this tent will be equally as suitable for the use for which the hospital tent is now put, the floor space being 16 feet square as against 14 feet 3 inches by 14 feet 6 inches of the hospital tent.

If this tent can be adopted for the purpose, as indicated, it will reduce the number of tents now issued from 7 to 3, i. e., pyramidal, large and small, and storage, and a resulting simplification in the question of manufacture and material, but much more so of supply.

Winter caps.—Complaint having been received that the winter cap adopted October 12, 1909, was not entirely satisfactory in that the cap did not conform sufficiently to the shape of the head and give sufficient protection to the face, this office, under date of April 9, 1912, submitted to the Surgeon General of the Army nine caps of different pattern from those now issued, in all of which it was believed the defects referred to in the present issue caps, were eliminated, with request that they be criticized by the Surgeon General and a cap selected from the nine submitted, which, in his opinion, would best meet the criticisms against the present issue cap.

The Surgeon General selected a cap, which, in his opinion, would be most suitable for issue to the service as best fulfilling the conditions necessary for winter use of the soldier. This office then requested the authority of the Secretary of War, in memorandum dated May 13, 1912, to manufacture sufficient of these caps to equip one company of infantry at Fort Brady, Mich., during the coming winter; these caps to be worn at the same time that the present issue cap is worn and a report to be rendered to the commanding officer of that post as to whether or not the experimental cap will be satisfactory for adoption in lieu of the present issue cap. Authority was granted for the manufacture of these caps and the commanding officer, Fort Brady, Mich., was directed to designate a company to make the test and furnish this office with the sizes necessary for the proper

equipment of the men. This has been done and the caps ordered manufactured and upon completion will be forwarded to the commanding officer, Fort Brady, Mich., in order that he may carry out the instructions received by him concerning the test.

Improvement in shoes.—The question of providing the enlisted men of the Army with a shoe that will meet the requirements of all service conditions has constantly received the most careful attention of this department.

Upon the recommendation of this office a battalion of the Fifth United States Infantry at Plattsburg Barracks, N. Y., was carefully fitted with marching shoes, to be worn on a 6-day practice march and in a 10-day maneuver camp. Directions were issued to take the necessary steps to insure a fair and exhaustive test of the shoes furnished and upon completion of the period of field training for the year 1911 to submit a full report upon the methods employed in fitting the shoes, accompanied by recommendations based upon actual experience of the command.

The reports received indicated that the shoes were given the test contemplated, but the result was of an unsatisfactory character.

The Quartermaster General, upon receipt of these reports, on October 12, 1911, submitted the same to the Chief of Staff for consideration of the Secretary of War and recommended that the board of officers convened under Special Orders No. 32, headquarters Department of the Lakes, March 7, 1908, for the purpose of conducting a special test regarding the fit and adaptability of the latest manufactures of marching and garrison shoes, be reconvened to study the question.

The Secretary of War having approved the foregoing recommendation, and the board, under the provisions of paragraph 7, Special Orders No. 57, 1911, headquarters Central Division, was reconvened.

Samples and specifications of marching and garrison shoes were thereupon furnished to the board.

On December 2, 1911, the board submitted a preliminary report, accompanied by radiographs and photographs of footprints, expressing the belief that it would be most desirable that the board be continued on duty for further tests and experiments. The board recommended that all measures necessary be taken to insure proper construction, proper supply, and proper fitting, these three elements being essential to each other.

In addition to carrying out these general improvements, a series of practical marching tests, to be held under the immediate supervision of the board and under conditions which would be absolutely comparable and fair to both the shoes and the welfare of the soldier, was suggested, these tests to be held at as early a date as possible and under suitable weather conditions.

In view of the thorough and painstaking manner in which the board had considered the subject and in order that its labors might be brought to a successful conclusion, the Quartermaster General, on January 29, 1912, recommended to the Chief of Staff that the recommendations of the board be approved and that early action be taken so that the manufacture of such shoes as would be required in the practical test be commenced as early as possible.

A complete set of marching and garrison shoes, consisting of all widths and sizes was thereupon furnished to the president of the board in order that the men who were to make the test could properly be fitted and upon receipt of the required sizes a modified shoe, suggested by the board, was ordered manufactured under contract at the St. Louis depot.

The Secretary of War approved the recommendation of the board and directed that Capt. William J. Glasgow, of the General Staff (one of the members of the board), proceed to the St. Louis depot to supervise the manufacture of the improved lasts and the experimental shoes. Such duty having been accomplished, the shoes were shipped to the president of the board.

The total cost of procuring these experimental shoes involved the expenditure of $1,166.18.

On the 17th of June, 1912, the final report of the board of officers was received in this office, from which the following is a synopsis:

Three hundred and fifty-six pairs experimental shoes, purchased as indicated, were issued to the enlisted men of the Seventh Infantry and were tried out on the march, together with 126 pairs of garrison tan and 117 pairs of marching shoes of the latest type.

The feet of the men were carefully measured and the shoes fitted to the men under the supervision of the board. The total distance marched was 117½ miles, the feet of the men being examined each day upon the end of the march and a careful record kept of injuries to the feet that may have been caused by the different types of shoes worn.

Due to the careful fitting, the board called special attention to the fact that out of 379 men not a single man was incapacitated by reason of foot injuries due to the footwear.

The board went into great detail as to the methods employed by it and the various kinds of injuries received by the feet due to the march and the types of shoes worn and submitted radiographs made of the best, the worst, and intermediate types of feet that came to the attention of the board, showing how the various types of shoes accommodated themselves to these different feet.

The following are the recommendations of the board:

1. That the experimental shoe proposed by the board, with a few minor improvements, be adopted as the marching shoe and that an additional width "A" be provided.
2. That as long as any lasts of the latest type of marching shoe remain on hand shoes for issue be continued to be made upon them, but under specifications based upon the experimental marching shoe, recommended by the board, believing that the present marching shoe was reasonably satisfactory when properly fitted.
3. That the present garrison tan and black dress shoes be abolished. This would cut the matter of shoe supply down to one last and one shoe and would be greatly to the interest of economy and supply.
4. That no shoe other than the official marching shoe in the form in which it may be adopted be used by officers or enlisted men when in the service uniform.
5. That should it be found desirable to retain a special black dress shoe, that it be made on the same last as the marching shoe of the same material and workmanship as under existing specifications, and that the same in emergency could serve as a satisfactory shoe for field service.
6. That an order be issued to insure the proper fitting of shoes throughout the service, said order to cover the method of measurement, fitting, and breaking in of shoes.
7. That hereafter only vegetable tanned leather without oil stuffing be used in the manufacture of marching shoes, mineral tanned leather not being considered the equal of vegetable tannage for military service.
8. That the inside backstay in the shoes be changed from bleached to unbleached calfskin and that the specifications prescribe a definite and sufficient thickness of this leather.
9. That the sock lining be more firmly cemented over the heel.
10. That the specifications hereafter distinctly prescribe the minimum length of time in which shoes shall remain on the last.
11. That the drill lining be carefully cemented to the leather of the toe under the top cap, and that only the best rubber cement be used for the purpose.
12. That each company be required to have in its possession at least two boxes of official foot powder as supplied by the Medical Department, and that the men be

required to dust this powder on their feet daily while marching; that each company keep one spool of zinc oxide plaster, and that the enlisted men be required to smoothly cover foot abrasions, blister, etc.

13. That each company be supplied with a simple cobbler's outfit, to be carried in the field, this outfit to consist of an iron last, knives, hammer, leather, and other shoe findings, and that each soldier have one pair of half soles in his surplus kit.

14. That a lightning shoe stretcher be issued to each company in addition to the present shoe stretchers.

On the 20th of June, 1912, the report was submitted to the Chief of Staff by the Quartermaster General, recommending that the recommendations of the board, with the exception of the supply of cobblers' outfits and lightning shoe stretchers and extra half soles, be approved, and that the proposed order as to fitting be in the future incorporated in the annual price list of clothing.

Instructions have been issued to the depot quartermaster at St. Louis to cause specifications and standard samples conforming to the patterns recommended by the board to be prepared, manufactured, and forwarded to this office; also, that four sides of leather and eight pairs of uppers assembled with all parts of bottom stock, showing materials used in manufacturing the shoes, be procured and furnished in connection with the standard samples, so that the department may be in a position, upon receipt of notification as to the action of the Secretary of War on the report of the board, to carry into effect the recommendations of the board, if approved, and to advertise for the manufacture of the necessary lasts and shoes required for the Army during the fiscal year 1913.

Hoods for overcoats.—The Quartermaster General on January 13, 1912, addressed a memorandum of the Chief of Staff stating that in every case where overcoats have been turned into the Philadelphia depot as deserters' clothing the hoods were practically new, giving no evidence of ever having been worn. That inasmuch as the overcoat is provided with a collar which, when turned up, comes well up above the ears and when used in connection with the winter caps no further protection to the head should be necessary.

Recommendation was therefore made that authority be granted for the discontinuance of the manufacture and issue of overcoat hoods as an article of uniform.

The recommendation of the Quartermaster General having been approved by the Secretary of War, the manufacture of hoods for overcoats has been discontinued. No final decision as to the disposition of the hoods now on hand has been arrived at, but it may be utilized in the manufacture of winter caps.

Trumpet cords and tassels.—The Secretary of War on April 12, 1912, approved the recommendation of the Quartermaster General that the trumpet cords and tassels be abolished as part of the equipment of troops. This, in view of the adoption of the bugle in lieu of the trumpet, as recommended by the Infantry and Cavalry equipment boards, which is provided with a russet-leather sling for carrying.

Shoe lasts.—To bring about the widest possible competition in the supply of shoes by the Army, this department since 1910 has purchased and furnished to the successful bidders the lasts upon which to make the shoes.

With a view to ascertaining the number of pairs of lasts that became unserviceable in the course of time, reports for data showing

the number of pairs of shoes that could be made upon one pair of lasts before they were rendered unfit for further use were called for.

The depot quartermaster at St. Louis, Mo., reported that experience demonstrated that the lasts for a pair of marching shoes could be depended upon to make between 200 and 300 pairs of shoes each. This was confirmed by the depot quartermaster, Boston, Mass.

The advisability of keeping on hand and in stock a large number of lasts has been, in the opinion of the undersigned, sufficiently demonstrated to warrant the continuance of their purchase and retention in stock, as by this means the department can, in case of emergency, turn them over to shoe manufacturers, thereby obtaining shoes when quickly needed in the minimum of time. It must be borne in mind, however, that the department will, in every change that may take place in the type or last of shoe, be compelled to purchase new lasts and dispose of those obsolete at a loss. Therefore, the necessity of the adoption of a suitable shoe for the service and its retention for at least a reasonable time is necessary, not only in the interest of economy, but also of supply and efficiency.

Clothing for troops in Alaska.—Report having been made to this office by the commanding general, Department of the Columbia, that the clothing issued to troops in Alaska was unsatisfactory in so far as its adaptability to the service was concerned, the Quartermaster General on January 30, 1912, recommended to the Chief of Staff that the commanding general, Western Division, be directed to convene a board of officers to take up, consider, report upon, and submit samples and specifications for such articles of Arctic clothing as, in their opinion, should be issued to troops stationed in Alaska in lieu of those now issued, and that the board consist of officers who had been stationed in Alaska and were specially qualified for the duties imposed upon them. It was further remarked that this office was prepared to furnish any special articles of clothing which it was thought necessary for the particular duties required of troops in Alaska, as has been the policy of the department in the past.

Directions to carry the foregoing recommendation into effect were communicated by The Adjutant General of the Army to the commanding general, Western Division, and sufficient funds for purchase of the necessary samples placed to the credit of the chief quartermaster of the Western Division.

On February 19, 1912, the proceedings of the board, which met pursuant to the provisions of paragraph 1, Special Order 36, Western Division, February 12, 1912, were forwarded through the headquarters of the division and upon receipt carefully considered. The report is very complete and clear, and the subject has been divided under four different classifications, viz:

1. Service conditions in garrison.
2. Service conditions on the trail.
3. Territorial conditions in north Alaska.
4. Territorial conditions in south Alaska.

The board recommended that the gratuitous issue to troops consist of all articles of a strictly personal character of such an amount above the regular issue in the United States as climatic conditions require; such articles to be issued on memorandum receipts as are not of a strictly personal character.

The proceedings of the board were accompanied by samples of all articles of clothing which were recommended for adoption, together

with specifications in detail, covering each article. These latter, with minor corrections, are suitable for adoption.

Regarding the issues as needed in the United States, for all stations in Alaska and issue of the special articles of clothing, the Territory has been divided into two parts, viz, north Alaska, including all posts and stations north of the Coast Range, commencing at Tonsina (about 55 miles north of Valdez) and south Alaska, all posts and stations south of Tonsina.

Under these two headings the issues have been divided into four lists:

1. The articles required for gratuitous issue to all enlisted men.
2. The articles required to be issued to men on telegraph lines or similar duty.
3. The articles to be kept in stock for sale or issue.
4. The articles for issue on memorandum receipt.

The proceedings of the board go carefully into detail as to the number of the various articles to be issued or to be kept in stock for issue under these four heads.

On May 22, 1912, the Quartermaster General submitted the proceedings of the board to the Chief of Staff for consideration of the Secretary of War, recommending approval of the recommendations of the board.

Upon return of the papers to this office, with the approval of the Secretary of War, dated June 1, 1912, they, together with the samples submitted by the board, were on June 4, 1912, referred to the depot quartermaster at San Francisco, Cal., with directions to procure and forward to this office a complete set of all the articles recommended for issue, in order that the same, together with the original samples, may be adopted as standards.

These instructions are now being carried out and funds to defray the the expense involved have been furnished.

Change in sizes of flags.—On the 24th of June, 1912, the President of the United States issued an Executive order requiring that all national flags and Union Jacks, with the following exception, shall conform to the following proportions, viz:

Hoist (width) of flag	1
Fly (length) of flag	1.9
Hoist (width) of Union	.54
Fly (length) of Union	.76
Width of each stripe	.077

The exceptions to the above are the colors carried by troops and camp colors, which are to be of the sizes prescribed for the military services (Army and Navy). The number of sizes of the flags purchased or manufactured for the several Government departments were limited to the following hoists, viz:

(1) 20 feet.
(2) 19 feet (standard).
(3) 14.35 feet.
(4) 12.19 feet.
(5) 10 feet.
(6) 8.94 feet.
(7) 5.14 feet.
(8) 5 feet.
(9) 3.52 feet.
(10) 2.90 feet.
(11) 2.37 feet.
(12) 1.31 feet.

When in the manufacture of any flag under the above specifications the resulting dimensions appear as fractions of an inch, said fraction shall be taken as the nearer inch.

The sizes of the Union Jacks are to be the same as those of the national flag with which it is flown, and all flags, except the colors carried by troops, and the corresponding jacks, shall have only 13 stars in the Union, in order that the indentity of the stars may be plainly distinguishable.

After making provision for the position and size of the stars, the time at which the order is to take effect was fixed as July 4, 1912, but it is required that the flags on hand on said date shall be continued in use.

The orders further provided that the field of the President's flag shall be blue.

Instructions have been given to the depot quartermaster at Philadelphia, Pa., to manufacture and forward to this office for adoption samples of garrison, post, storm, and recruiting flags, ensigns, and jacks for harbor boats, and camp colors, conforming to the standard proportions fixed by the Executive order quoted; this will change the garrison flag to 20 feet hoist by 38 feet fly, instead of 20 feet hoist and 36 feet fly; the post flag to 10 feet hoist by 19 feet fly, instead of 10 feet hoist and 20 feet fly, and the storm and recruiting flags to 5 feet hoist by 9½ feet fly, instead of 4 feet 2 inches hoist by 8 feet fly.

Regarding the flag of the President of the United States, there has been heretofore furnished by this department the following as described by paragraphs 217 and 218, Army Regulations, viz:

1. A flag of blue bunting with the official coat of arms of the United States of suitable size in the center 10.20 feet hoist and 14.40 feet fly for use of the President while on a Government transport or afloat.

2. A color of scarlet silk, 6 feet 6 inches fly and 4 feet on the staff, having in each corner a white star and in the center a large star with a blue field containing the coat of arms of the United States, the large star being surrounded on the scarlet field with other white stars, one for each State. This color is used by the President while on land or with the Army.

The scarlet color having been omitted from the Executive order, a report was submitted to the Chief of Staff on July 10, 1912, requesting information as to whether the field of the silken color is to be changed from scarlet to blue, and if so, whether the field of the large star upon the same is to be red, thereby making a contrast as in the present color.

As soon as a decision shall have been made, steps will be taken in accordance therewith.

Specification for the uniform of the Army.—The regulations for the uniform of the Army having been prepared by the Chief of Staff and promulgated to the Army, it became necessary to prepare specifications for all articles of uniform for officers and enlisted men. The same were prepared in this office and published in circular of the Quartermaster General of January 25, 1912. Copies of same have been distributed to the several division headquarters, to all post and regimental quartermasters, and to such military tailors as made applications for the same, as required by existing orders.

Standard samples of officers' uniforms.—In order to comply with the provisions of paragraph 45, Uniform Regulations, three complete sets of standard samples were purchased and furnished to the headquarters of the Eastern, Central, and Western Divisions for permanent record.

One set was also procured, sealed, and adopted as the standards for the Army. They are carefully kept in this office for reference whenever required.

Samples of these materials, approved and adopted by the Secretary of War, were also assembled in book form, of which duplicates were furnished to each department and division headquarters and all post and regimental quartermasters and military tailors desiring them.

Steps are now being taken, in compliance with the instructions of the Secretary of War, to manufacture standard samples of uniforms prescribed for officers serving in the Tropics and to furnish one set each to the headquarters, Philippines Division; headquarters, Department of Hawaii; the Porto Rican Regiment; and to troops in the Panama Canal Zone.

Field supply depots.—This office has continued the accumulation, in so far as appropriations of Congress permitted, of a reserve stock of clothing and equipage to be placed in field supply depot No. 1.

Enforcement of General Order 129, War Department, 1911.—This office has constantly had in view the provisions of paragraph 4, General Order No. 129, War Department, 1911, and has in compliance with its provisions made every possible effort to insure the exhaustion of the supply of articles of clothing and equipage of old pattern prior to the issue of a corresponding article of a new pattern.

It is recommended that the provisions of this order be strictly adhered to and enforced, as by this means only can the exhaustion of articles of old pattern be expected and the resultant loss to the Government through their long storage and consequent deterioration prevented.

Loan of tents.—Congress, by public resolution No. 18, approved February 9, 1912, authorized the Secretary of War to loan such tents and cots for use of the Confederate Veterans' Reunion to be held at Macon, Ga., during the month of May last as could conveniently be spared.

In compliance with the request of the committee having charge of the reunion the following articles were furnished for the purpose, viz:

Storage tents, with poles	663
Hospital tents, with poles	24
Conical tents, with poles and tripods	313
Tent pins, large	10,832
Tent pins, small	27,000
Cots	13,000

The money value of this property amounted to $98,667.14, for which a satisfactory bond was given as required by the public resolution referred to.

The property has been returned to the Philadelphia depot and the cost of transportation to Macon and return has been defrayed by the committee in charge of the reunion. As soon as the tentage has been overhauled and inspected the committee will be informed of the cost to the Government of placing same in a condition fit for reissue and reimbursement demanded.

Congress, by public resolution No. 29, approved April 22, 1912, also authorized the loan of tentage for the encampment of the G. A. R. to be held at Pullman, Wash., in June last.

Sufficient tents to accommodate 4,000 persons were tendered by this department to the committee in charge of the reunion, but inasmuch as the tents were to be shipped from San Francisco the committee did not avail itself of the offer extended.

Exhibit of International Congress of Hygiene and Demography.—Steps have been taken for the exhibit at the International Congress of

Hygiene and Demography to be held in the city of Washington, D. C., on September 1, 1912, a complete representative collection of all kinds of service uniforms worn under the various climatic conditions, including the clothing worn on the trail, on telegraph duty, and in garrison by the troops stationed in Alaska, as well as the various kinds of tentage issued to the service.

* * * * * * *

CONSTRUCTION AND REPAIR.

Appropriations and expenditures.—A tabulated statement attached hereto as Exhibit M shows the appropriations and amounts available within the past fiscal year for the construction, repair, and rental of buildings, including plumbing, heating, lighting, and equipment, purchase and rental of land, construction and repair of water, sewer, lighting and power systems, and other improvements on military reservations; also the approximate amounts apportioned from the several appropriations, the general purposes for which apportioned, and the unapportioned balances at the close of the fiscal year.

Construction of buildings.—The buildings constructed or contracted for from funds of the past fiscal year, the cost of the various items of work, and the appropriations to which the cost has been charged, not including work in the Philippine Islands, are set forth in the general construction statement forming a part of this report attached hereto as Exhibit N. As compared with previous fiscal years, the amounts available for construction of buildings were so small that only construction of the most urgent character could be undertaken.

The principal items of work were as follows:

Alcatraz Island and Fort Leavenworth: Continuing construction of military prisons from the special appropriations for that purpose.

Fort Bliss, Tex.: Stables and other buildings for four troops of Cavalry.

Fort D. A. Russell, Wyo.: Barracks for one company Hospital Corps, isolation hospital, and addition to post hospital.

Fort Des Moines, Iowa: Reconstruction of two Cavalry stables.

Jackson Barracks, La.: Barracks, mess hall, and lavatory for one company of Coast Artillery.

Panama Canal Zone: Providing temporary shelter for officers and enlisted men.

Fort Ruger, Hawaii: Completion of post for two companies of Coast Artillery.

Schofield Barracks, Hawaii: Commencing construction of permanent Cavalry and Infantry posts.

Fort Screven, Ga.: Band barracks and lavatory for Coast Artillery.

Fort Shafter, Hawaii: Three hospital buildings.

Walter Reed Army General Hospital, District of Columbia: Isolation hospital, kitchen and mess room, and addition to nurses' quarters.

Fort Yellowstone, Wyo.: Chapel and annex to hospital.

Fort Mills, Philippine Islands: The work of constructing this post on Corregidor Island for 10 companies of Coast Artillery was continued during the past year, and approximately $246,000 was allotted from the appropriation for "Seacoast defenses, Philippine Islands and Hawaii," for carrying on the construction work during the year.

In the planning of buildings constructed during the past fiscal year every effort has been made to simplify the type of construction and

to reduce the cost of the buildings. During the past year the cement gun has been used in construction work at Fort Sam Houston, Tex., Fort Huachuca, Ariz., and Letterman General Hospital, Presidio of San Francisco, Cal., and Fort Ruger, Hawaii.

Shooting galleries and ranges.—The total amount appropriated under this head was $125,985.

The total apportionments made from this amount are classified as follows:

Annual allotments for repairs, improvements, and rentals	$46,500.00
Apportioned to Philippine Islands	12,523.14
Special apportionments for construction work and improvements on ranges	32,051.78
Special apportionments for repairs, rentals, etc	21,258.87
Unapportioned balance	13,651.21
Total	125,985.00

The total amount expended for rents during the year was $5,433.78.

The special apportionments for construction work and improvements on target ranges were as follows:

Fort Bliss, Tex., water system	$12,500.00
Catoosa Springs, Ga., fencing	2,976.00
Fort D. A. Russell, Wyo., improvements	5,024.00
Fort Ethan Allen, Vt., concrete target range house and other improvements	1,594.96
Fort Huachuca, Ariz., target house and telephone booth	580.37
Fort Leavenworth, Kans., improvements	1,139.45
Leon Springs, Tex., completion of fence	3,550.00
Fort Sheridan, Ill., improvements	3,605.00
Fort Snelling, Minn., concrete parapet	1,082.00
Total	32,051.78

Wharves, sea walls, and retaining walls.—The total amounts apportioned for work of this character during the past fiscal year were as follows:

Construction	$9,839.80
Repairs and improvements	41,620.00
Total	51,459.80

To complete the ferry slip at Governors Island the sum of $4,900 was expended from funds of the past fiscal year for the construction of gallows frame and machinery for this slip. The sum of $5,593.79 was expended from this appropriation for protection of river banks at Fort Riley. The work was done by the Engineer Department, the cost being reimbursed by the Quartermaster's Department. Other important items of work during the past fiscal year were repairs to sea wall at Fort Wood, N. Y. ($3,275); extending boatways at Fort Gibbon ($800); renewing piles at Fort Casey ($6,047); repairs to wharf at Alcatraz Island ($3,000 from allotment for annual repairs); and completion of coping on sea wall at Washington Barracks ($800).

Dredging channels.—During the past fiscal year $1,400 was expended for dredging near the ordnance wharf at Governors Island and $1,380 for additional dredging at Fort Totten.

Purchase of land.—Land was purchased in the United States during the fiscal year, under authority of the Secretary of War, as follows:

At Front Royal, Va., for use of remount depot, approximately 5,189.668 acres. There was available for this purpose the sum of $200,000, appropriated under the head of "Horses for Cavalry, Ar-

tillery, and Engineers," fiscal year 1912, "for the purchase of land accessible to the horse-raising section of the State of Virginia, for the assembling, grazing, and training of horses purchased for the mounted service." The cost of the land purchased during the fiscal year was approximately $200,000.

At Fort D. A. Russell, Wyo., "for the improvement and protection of the water supply and for the improvement of the grounds of the Fort D. A. Russell target and maneuver reservation," there has been purchased 11,470.59 acres, including improvements, at a cost of $98,732.64. The amount appropriated for this purpose under the head of "Water and sewers, 1912," was $100,000. One tract of 160 acres owned by the F. E. Warren Mercantile Co. within the reservation, on which the Government has an option to purchase at the price of $1,530, remains to be acquired from available funds pertaining to the fiscal year 1913, when purchase of all the tracts within the reservation owned by private parties will be completed.

Complete report of and purchased in the Philippine Islands has not yet been received, but correspondence on file in this office shows that at Regan Barracks, Albay, P. I., about 10 acres were purchased during the past fiscal year from the appropriation for "Barracks and quartermaster, Philippine Islands," for an addition to the reservation, at a cost of $900.

RESERVATIONS AND REVOCABLE LICENSES.

During the fiscal year 1912 the following military reservations were relinquished by the War Department:

Assinniboine, Fort, Mont.—Transferred November 20, 1911, to the Interior Department for disposition as provided by law under the act of July 5, 1884 (G. O. 157, W. D., 1911).

Barracks lot, Honolulu, Hawaii.—March 27, 1912, restored to the Territory of Hawaii, under act of April 30, 1900, amended by act of May 27, 1910 (S. O. 79, W. D., 1912).

Brown, Fort, Tex.—October 14, 1911, transferred to the Interior Department for disposition as provided by law, under the act of July 5, 1884 (G. O. 147, W. D., 1911).

Wingate, Fort, N. Mex.—By executive order dated May 31, 1911 (G. O. 80, W. D., 1911), made a part of the Zuni National Forest, to be protected as national forest lands, but to remain subject to the unhampered use of the War Department for military purposes.

Niobrara, Fort, Nebr.—August 1, 1911, under acts of July 5, 1884, and June 25, 1910, about 1,093.50 acres withdrawn from reservation for military purposes and reserved for an experimental farm, and the remainder of the reservation transferred to the Interior Department (G. O. 111, W. D., 1911).

Grant, Fort, Ariz.—August 10, 1911, under act of July 5, 1884, transferred to the Interior Department for disposition as provided by law (G. O. 133, W. D., 1911).

Pasay Barracks, Rizal, Luzon, P. I.—September 13, 1911, under act of July 1, 1902, transferred to the Government of the Philippine Islands (G. O. 133, W. D., 1911).

Appendix O attached to this report contains a list of revocable licenses granted during the past fiscal year by the Secretary of War to individuals and firms. The privileges were granted for various

purposes, including telephone lines, electric transmission lines, railroad rights of way, occupation of public buildings, and in a few exceptional cases for the erection of buildings.

Annual repairs to buildings, etc.—Based on estimates of March 1, 1911, received from military posts, apportionments were made to departments and independent posts for annual repairs to buildings, and allotments were made to each post by the department commander within the limit of the funds available. Instructions were also given to retain a reserve balance in each department to meet unforseen contingencies.

The total amount apportioned from each appropriation of the fiscal year 1912 for annual repairs to buildings was as follows:

Barracks and quarters	$619,640.00
Military post exchanges	22,807.00
Regular supplies:	
Reservation fences	5,000.00
Heating plant, exterior heating system, and heating within buildings	71,517.46
Steam cooking systems	431.50
Lighting plants, exterior lighting systems, and lighting within buildings	46,615.52
Bakery buildings	7,935.10
Ice and refrigerating plants	2,781.00
Laundry buildings	1,691.42
Water and sewers:	
Fire apparatus	11,284.00
Pump house and water systems	52,566.15
Plumbing in buildings	110,877.04
Sewage distributing plants, sewerage systems, and crematories	15,385.81
Incidental expenses, for flagstaffs, picket lines, and electric-bell systems	9,584.00
Roads, walks, wharves, and drainage:	
Roads, curbs, gutters, and railroad tracks	101,918.00
Walks	22,292.00
Wharves	20,478.00
Sea walls, retaining walls, drains, and drainage systems	15,320.00
Improvement of grounds	29,992.00
Army transportation, for railroad equipment and rolling stock	1,115.90
Total	1,169,231.90

Special repairs to buildings, etc.—In addition to the annual allotments above enumerated, funds were apportioned during the fiscal year for special repairs (the necessity for which could not be anticipated when the annual estimates were prepared) and for alterations and improvements on buildings, systems, and grounds at the various military posts.

The total amount expended from each appropriation for special repairs, alterations, etc., was approximately as follows:

Barracks and quarters	$132,336.94
Military post exchanges	3,688.97
Construction and repair of hospitals	143,935.96
Quarters for hospital stewards	7,495.79
Shooting galleries and ranges	62,325.09
Regular supplies	136,674.56
Water and sewers	11,644.29
Roads, walks, wharves, and drainage	10,537.67
Incidental expenses	753.02
Total	509,392.29

* * * * * * *

Roads and walks.—During the fiscal year 1911 new systems of roads and walks were started at many of the military posts with the expectation that they would be extended during the fiscal year 1912; but on account of the large reduction in the appropriation for this purpose for the fiscal year 1912 work of this nature had to be deferred. Only such roads and walks as were absolutely necessary to serve new buildings were put under construction. The more important of these projects were:

Fort Andrews, Mass	$4,900.00
Fort Barrancas, Fla	1,250.00
Fort Crook, Nebr	950.00
Jefferson Barracks, Mo	1,750.00
Jackson Barracks, La	1,330.90
Fort Ruger, Hawaii	4,453.82
Fort Winfield Scott, Cal	12,995.00

Railroads on military reservations.—There was authorized during the year $5,170 to complete the construction of the railway terminal system at Fort Leavenworth, Kans., which was begun in May, 1907. The work was done by the purchase of material and hire of labor. At Fort H. G. Wright, N. Y., the spur track was extended to serve the various storehouses at a cost of $344.50.

It is the policy of the department to own, where practicable, all railroad tracks on a military reservation, and to give opportunity to all carriers to make connections thereto at the entrance of the reservation.

On account of lack of funds, the construction of a railroad spur track at the Philadelphia depot and a railroad at the army supply depot, Fort Mason, Cal., had to be put off until the fiscal year 1913.

Grading and drainage.—For the same reason as given under the heading above of "Roads and walks," i. e., the reduction in the appropriation for the fiscal year 1912, no extensive work under these two items could be undertaken.

However, it became necessary to fill and grade the low places in the parade ground at Fort Moultrie, S. C., at a cost of $3,000. At Fort Riley, Kans., it was necessary to repair the banks of the Republican River to keep the same from overflowing the military reservation. The work was done by the Engineer Department, the necessary funds being furnished by the Quartermaster's Department. Actual cost, $5,593.79.

Water-supply systems.—It became necessary during the year to increase the supply of water at various posts by sinking additional wells, constructing cisterns, installing pipe line, etc. New wells were sunk at Fort DuPont, Del., $9,000; Fort Howard, Md., $8,500; Fort Logan, Colo., $6,330, and 34 cisterns were constructed at Fort H. G. Wright, N. Y., at a cost of $33,000. To bring water down from Garden Canyon to the post of Fort Huachuca, Ariz., a pipe line approximately 45,000 feet long was constructed at a cost of $38,186.76. At Fort Levett, Me., the water-supply system was improved by the construction of a reservoir and tank, $6,251; pump house and well shelter, $2,939.99; pumps and machinery, $4,135; pipe, etc., $2,092. At Fort Screven, Ga., a 150,000-gallon steel tank and trestle was constructed costing $11,200, and at Fort Washington, Md., a 60,000-gallon tank and trestle was built at a cost of $5,240.

Steps were taken to provide the post of Schofield Barracks, Hawaii, with a permanent water-supply system. Seven hundred tons of steel

plates to be used in the manufacture of the water pipe line of this system were purchased in the United States at a cost of $25,200. The constructing quartermaster expended approximately $30,800 in the manufacture of pipe and constructing a ditch and tunnel for the new system. The work is being done by the purchase of material and hire of labor. The funds required to complete the system will have to be obtained from the appropriation for the fiscal year 1913.

Filtration plants.—At Fort Sheridan, Ill., a filtration plant was installed in the pumphouse at a cost of $15,150. A contract was entered into for the construction of a filtration plant at Fort Omaha, Nebr., to cost $4,907. Two additional Jewell filters were purchased and installed in the pumphouse at the Presidio of San Francisco, Cal.

Water distributing systems.—The more important projects of this nature that were accomplished during the fiscal year 1912 are as follows:

Fort Logan, Colo	$12,091.00
Fort McDowell, Cal	4,531.90
Fort Rosecrans, Cal	3,475.00
Fort Sam Houston, Tex	6,449.00
West Point, N. Y	10,231.45

The consumption of water at many posts was found to be excessive, and with a view to reducing the same approximately 1,000 meters ranging in size from $\frac{5}{8}$ to $1\frac{1}{2}$ inches were purchased by the depot quartermaster, New York City, under contract, for installation in various barracks, quarters, hospitals, and other buildings at some of the larger posts. It is believed that by metering these various buildings an accurate check can be kept of the amount of water consumed and that any leakage may readily be detected. These meters have been installed as a test and, if the results warrant it, additional meters will be purchased and installed during the fiscal year 1913.

Sewer systems.—The post sewer system at Fort Bliss, Tex., was connected to the sewer system of the city of El Paso at a cost of $11,900. For extending the outfall sewer at Fort Crook, Nebr., $1,399 was authorized. A concrete sewer was constructed at Fort Omaha, Nebr., to take the place of an open ditch; cost, $12,200. New sewer systems were constructed at Fort Ruger and Schofield Barracks, Hawaii, at a cost of $7,000 for each.

Sewage disposal.—At Fort McPherson, Ga., a sewage-disposal plant was constructed at a cost of $23,979. For Batteries Sherwood, Slaughter, and Balney, at the Presidio of San Francisco, Cal., a small hydrolytic tank was authorized; cost, $536.

Fire apparatus.—All new fire apparatus and hose required on account of new construction or to increase the apparatus at any post or depot, as well as gasoline fire engines and chemical fire engines to replace such worn-out and condemned engines are considered as a class "D" supply, and requisitions for same are submitted to this office, whence they are sent to the depot quartermaster, New York City, for supply after advertisement.

Repairs to old fire apparatus and new fire apparatus and hose required to replace worn out and condemned apparatus and hose (except gasoline fire engines and chemical fire engines), but in no way increasing or changing the equipment of any post or depot, are considered as class "B and III" and must be provided from the annual apportionment made for the purpose.

During the year new apparatus was purchased at a cost of approximately $33,000.

Electric lighting systems, power plants, etc.—The total amount expended from the regular supplies appropriation is as follows:

Projects for construction and extension of lighting and power systems	$309,637.36
Purchase of incandescent lamps	56,456.86
Central heating systems (small improvements)	798.84
Oil-burning apparatus	29,089.11
Total	395,982.17

Purchase of light.—The total amount expended from the appropriation for "Regular supplies" for the purchase of electric current during the year was $453,150.77.

Pumping and refrigerating plants.—The total cost of work under these heads is as follows:

Pumping plants (from "Water and sewers" appropriation)	$130,638.63
Ice and refrigerating plants (from "Regular supplies" appropriation)	3,389.69
Total	134,028.32

Laundries, crematories, and sawmills.—The total amount expended for each of these classes of work is as follows:

Laundry plants (from "Regular supplies" appropriation)	$40,897.25
Construction of garbage crematories (from "Water and sewers" appropriation)	12,734.00
Sawmills (from "Barracks and quarters" and "Regular supplies" appropriations)	2,170.47

Purchase of water.—For the purchase of water during the year, $211,522.19 was expended from the appropriation for "Water and sewers."

TRANSPORTATION.

WATER.

Army transport service.—This service now consists of 18 ocean-going vessels, owned and operated as required for the transportation of troops, animals, and supplies. These vessels were engaged in service or stationed at the close of the fiscal year as follows:

Name.	Class.	Location.
Pacific Fleet.		
Buford	Troop ship	Out of commission, San Francisco.
Burnside	Cable ship	Inactive at Seattle, Wash.
Crook	Troop ship	Out of commission, San Francisco.
Dix	Frt. and animal ship.	Out of commission, Seattle.
Logan	Troop ship	Trans-Pacific service.
Sheridan	do	At St. Michael, Alaska.
Sherman	do	Trans-Pacific service.
Thomas	do	Do.
Slocum	Tug	In service, San Francisco Harbor.
Atlantic Fleet.		
Kilpatrick	Troop ship	Out of commission, Newport News, Va.
McClellan	do	Do.
Meade	do	Do.
Sumner	do	Do.
Philippine Fleet.		
Liscum	Troop ship	Undergoing repairs, Shanghai, China.
Merritt	do	Inter-island service.
Seward	do	Out of commission, Manila, P. I.
Warren	do	Inter-island service.
Wright	do	Do.

Movement of transports.—The regular monthly sailings for the Philippines from San Francisco have been maintained throughout the year, but the regularity of the sailings from Manila was somewhat interfered with for a period by reason of the transports being held for possible emergency use in carrying an expeditionary force to China. Thus the *Sherman*, scheduled to leave Manila November 15, sailed December 11, and the *Thomas*, scheduled for December 15, left the Philippines January 15, 1912. This interruption necessitated the *Sheridan* being placed in commission to take the regular run of the *Sherman* leaving San Francisco January 5, 1912. After being held at Manila as an extra ship for about a month, the *Sheridan* was returned to the United States with the Fourteenth Cavalry aboard.

Upon receipt of orders, the *Logan* was loaded and dispatched from Manila on January 12, 1912, carrying the United States expeditionary force, consisting of some 21 officers and 523 enlisted men, to Chingwangtao, China, en route to Tientsin and other points for duty with the troops of other powers. The strength of this command was later supplemented to approximately 1,200 enlisted men by the use of the *Warren*.

At the request of the State Department, the *Buford* was hurriedly prepared for sea and left San Francisco on April 28, 1912, for various ports on the western coast of Mexico. The ship returned to San Francisco on June 1, 1912, having brought to the United States some 364 refugees, including 156 women and children. The expense of this trip amounted to $29,979.34, and was defrayed by the War Department as incidental to the military service.

The *Sheridan* was utilized to effect the interchange of regiments in Alaska, leaving San Francisco June 1 and returning thereto on July 22, 1912. The ship was detained considerably in arriving at Fort Davis by the ice fields in the Bering Sea.

The transport *Dix* made one round voyage from Seattle to the Philippines during the year, and for lack of proper cargo of animals and freight was then placed out of commission at her home port, where she still remained at the close of the fiscal year.

REPAIRS.

San Francisco.—The transports in operation from this port have been maintained in proper running condition by repairs at the end of each round trip, which have averaged in cost $2,512 for each voyage. The general overhauling of the *Thomas* was completed during the year, and the ship resumed active service beginning November 6, 1911.

Seattle.—The repairs found necessary to the transport *Dix* aggregated $16,737.62 during the year and to the cable ship *Burnside* $12,854.07.

Newport News.—On two different occasions during the year the reserve transports at Newport News were coaled and prepared for sea service. The repairs incident thereto amounted during the fiscal year as follows: *Kilpatrick*, $12,680.95; *Meade*, $1,667.26; *McClellan*, $19,631.08; *Sumner*, $19,814.99.

Service for other departments.—There have been carried by transports during the year for other executive departments and for the

Philippine government, passengers and freight, the value of which at tariff rates would be as follows:

Navy Department	$305,014.00
Post Office Department (including 322,818 pounds mail)	101,060.53
Philippine government	80,423.32
State and other departments	1,948.92
Total	488,446.77

Work of the transports.—The following is the summary of the work performed by the transports during the year:

Passengers.

Between—	Sailings.	Officers.	Enlisted men.	Civilians.	Total.
United States and Philippines	12	485	10,675	1,231	12,391
Manila and United States ports	12	496	8,202	2,030	10,728
Seattle and Manila	1			3	3
Interisland ports		65	1,190	129	1,384
Galveston and other ports	2	61	1,745	50	1,856
United States and Alaskan ports	1	40	884	132	1,056
United States and Mexican ports	1	1	40	1	42
Mexican ports and United States	1	1	40	380	421
Other ports		371	5,924	1,249	7,544
Total		1,520	28,700	5,205	35,425

Cargo.

Between—	Animals.	Freight.	Remains.	Lumber.	Mail.	Money (dollars or pesos).
		Tons.		*Feet.*	*Pounds.*	
United States and Philippines		20,190			112,159	5,251,433.80
Philippines and United States		7,992	111		44,434	356,703.40
Seattle and Manila	361	6,388				
Manila and Seattle		33				
San Francisco and Honolulu		2,181			67,259	1,500,000.00
Other ports	189	11,407	14	122,697	98,966	136,547.00
Total	550	48,191	125	122,697	322,818	7,244,684.20

Earnings and expenditures.—The net earnings of the transports during the year for the above service, based upon the lowest rates offered for similar service by commercial lines, have been:

For passengers	$2,469,774.97
For cargo	498,706.46
Total	2,968,481.43

At public commercial rates the earnings would be:

For passengers	$2,469,834.97
For cargo	541,687.64
Total	3,011,522.61

The foregoing does not include the value of transporting families of officers, soldiers or employees, or other persons not entitled to public transportation from an appropriation of the United States or the Philippine government, nor for coal transported by the transports for their subsequent use. The value of such gratuitous service during the year, however, was $500,783.05.

The expenditures for the operation and maintenance of the transports during the year were as follows:

	In commission.	Out of commission.	Total.
Wages of officers and crews	$464,332.85	$84,901.46	$549,234.31
Repairs	66,408.50	63,131.42	129,539.92
Coal	288,506.92	15,438.93	303,945.85
Deck, engineer, and steward supplies	487,524.43	36,881.91	524,406.34
Miscellaneous	90,218.50	10,412.29	100,630.79
Total	1,396,991.20	210,766.01	1,607,757.21

Shore expenses, including proportionate salaries of officers, commutation of officers' quarters, wages of employees, rent of offices, warehouses, wharves, etc., were as follows:

San Francisco	$49,605.92
Seattle and Tacoma	6,245.81
Newport News	5,463.75
Honolulu	5,385.58
Nagasaki	9,570.31
Manila (estimated)	8,000.00
Total for this purpose	84,271.37
Grand total	1,692,028.58

Included in these expenditures is the cost of operating the *Burnside* while engaged in cable work for the Signal Corps of the Army, the total of which was $95,186.01.

Inasmuch as the service rendered by the *Burnside* was not performed in the interests of the Quartermaster's Department, the expenditure therefor should be deducted, leaving the net cost to the Government on account of the transportation of troops, supplies, etc., and the maintenance of all transports, both active and inactive, during the fiscal year $1,596,842.57.

Recapitulation.

	Lowest commercial rate.	Public commercial rate.
Earnings of the transports during the year	$2,968,481.43	$3,011,522.61
Expense of operation and maintenance during same period	1,596,842.57	1,596,842.57
Savings to the Government by using transports over same service by commercial vessels	1,371,638.86	1,414,680.04

Philippine inter-island service.—The new transport mentioned in last annual report was completed during the year for inter-island service in the Philippines and named the *Merritt*, the actual work of construction being performed by the Shanghai Dock & Engineering Co., of Shanghai, China. The vessel has already made two or three voyages in the present fiscal year and is reported to be thoroughly satisfactory in every respect.

Harbor-boat service.—The department has operated during the fiscal year in the various harbors along the Atlantic, Pacific, and Gulf coasts, 6 first-class steel mine planters, 2 cable steamers, 2 ferry steamers, 22 passenger and freight steamers, 31 tugs and artillery steamers, 3 lighters, 38 steam and gasoline launches, and 27 junction-box launches; a total of 131 owned vessels engaged in quartermaster,

Artillery and signal work, at a total expenditure for wages of officers and crews, fuel, supplies, repairs, water, etc., of $1,050,405.36.

These vessels carried during the year 2,552,132 passengers and 160,314,972 pounds of freight.

To supplement the above service, chartered vessels were operated in the district of Charlestown, between Wilmington, N. C., and Fort Caswell, N. C., at a cost of $7,353.72; and in the district of Narragansett Bay, between Newport and Fort Greble, R. I., at a cost of $4,514.60. Artillery service was also rendered by these vessels whenever required. The entire cost of the chartered service, including the cost of hire of substitute vessels for short periods to replace owned vessels undergoing repairs, and of vessels for towing targets, vessel-tracking, subcaliber practice, and like purposes for the Coast Artillery which could not be performed by other vessels of the service amounted to $12,588.32 during the fiscal year.

Construction and purchase of vessels.—Two gasoline launches were constructed under contract at Seattle, at a cost of $3,530 for both, for use in connection with maintenance of the telegraph lines operated by the Signal Corps on the Yukon River. These two boats were not shipped to Alaska until after the end of the fiscal year and names have not yet been assigned them.

The following gasoline launches were purchased to fill urgent requirements:

Launch *Elizabeth*, 40 feet long by 10 feet 6 inches beam, renamed the *Recruit*, for service at Fort Slocum, N. Y., to supplement the present ferry service between Fort Slocum and New Rochelle; cost $1,800.

A new boat, 25 feet long by 5 feet beam, for use at Fort Whitman, Wash., named the *Whidbey;* cost $500.

LAND.

Freight and passengers.—During the fiscal year there were transported by the Quartermaster's Department 129,554 passengers, 13,089 animals, 253,040 tons of freight, $699,580.42 funds, and 3,230 remains of officers, enlisted men, and civilians, as shown by the following statement:

	Railroad.	Commercial vessel.	Wagon.	Stage.	Express.	Total.
Passengers:						
Officers	2,867	442	54	21	.....	3,384
Enlisted men	109,161	11,964	75	227	.....	121,427
Civilians	3,782	916	2	43	.....	4,743
Total	115,810	13,322	131	291	.....	129,554
Animals:						
Horses	7,910	894	.....	.....	60	8,864
Mules	2,506	1,719	.....	.....	.....	4,225
Total	10,416	2,613	.....	.....	60	13,089
Stores (tons):						
Quartermaster	88,262	42,995	8,424	.....	101	139,782
Subsistence	19,478	12,392	4,354	2	233	36,459
Ordnance	21,035	6,523	1,610	.....	24	29,192
Medical	1,351	687	893	.....	16	2,947
Engineer	828	1,672	71	.....	4	2,575
Signal	1,662	1,068	41	.....	14	2,785
Miscellaneous	12,130	4,390	22,772	.....	8	39,300
Total	144,746	69,727	38,165	2	400	253,040

Funds	$699,580.42
Remains	3,230

The statement of freight and passengers transported indicates an increase of 17,201 passengers transported over those transported during the fiscal year 1911, a decrease of 12,679 animals from those transported during the fiscal year 1911, and 33,325 tons of supplies less than shipped during the fiscal year 1911.

The increase in the number of passengers is due to the large movements of troops to and from the Philippine Islands and Hawaiian Islands during the fiscal year 1912, there being practically no movements to these points during the fiscal year 1911.

The decrease in animals and stores shipped is due to the large shipments made in connection with the maneuvers along the Mexican border during the fiscal year 1911, the shipments on this account during the fiscal year 1912 being very small.

Quartermaster supplies show an increase of 6,949 tons; commissary supplies a decrease of 6,803 tons; ordnance stores a decrease of 1,565 tons; medical stores a decrease of 2,993 tons; engineer stores a decrease of 1,977 tons; signal stores a decrease of 1,037 tons; and miscellaneous stores a decrease of 25,897 tons.

Shipments in deep-sea commercial vessels.

	General merchandise, forage, etc.	Lumber.	Passengers.	Cost.
American:	*Tons.*	*Feet.*		
Philippines	11,788	140,100	.....	$80,823.31
Hawaii	7,292	312,400	1	51,246.75
Porto Rico	1,226	14,800	8	10,735.15
Alaska	3,385	.....	377	88,710.00
Other ports	129	.....	3	7,912.38
Total	23,820	467,300	389	239,427.59
Foreign:				
Philippines	12,777	677,754	.....	68,466.50
Other ports	14	.....	9	4,130.45
Total	12,791	677,754	9	72,596.95
Total American and foreign	36,611	1,145,054	398	312,024.54

Shipments made to Manila, P. I., under special rates of $10 and $15 per ton.

Place.	Route.	Weight.	Measurement.	Cost.
		Pounds.	*Cubic feet.*	
Galveston, Tex	Atchison, Topeka & Santa Fe.	2,625	440	$39.38
Chicago, Ill	do	1,080,191	26,852	7,527.25
Do	Chicago, Milwaukee & St. Paul	586,166	11,487	3,048.40
Do	Southern Pacific	2,024,957	48,245	14,283.00
Do	Western Pacific	113,824	2,403	901.13
Rock Island, Ill	Atchison, Topeka & Santa Fe.	87,263	4,895	1,830.00
Do	Chicago, Milwaukee & St. Paul	254,468	16,482	4,000.00
Do	Southern Pacific	130,089	4,445	1,665.00
Do	Western Pacific	13,948	976	366.00
Omaha, Nebr	Southern Pacific	213,170	5,570	1,637.43
St. Louis, Mo	Atchison, Topeka & Santa Fe.	1,292,298	31,330	14,294.11
Do	Southern Pacific	661,644	13,077	6,577.47
Jeffersonville, Ind	Atchison, Topeka & Santa Fe.	229,674	9,960	3,016.06
Do	Southern Pacific	955,554	42,511	14,022.61
New York, N. Y	Atchison, Topeka & Santa Fe.	6,471,497	115,931	32,357.50
Total		14,117,368	334,604	105,565.34
Less New York		6,471,497	115,931	32,357.50
From other points		7,645,871	218,673	73,207.84

Weights and cost of shipment and packing of shipments of baggage of officers, noncommissioned officers and civilians.

	Baggage.	Professional books.
	Pounds.	*Pounds.*
Officers	11,297,208	1,606,601
Noncommissioned officers	1,220,655	1,102
Civilians	475,620	.....
Total	12,993,483	1,607,703

Cost of shipment	$249,084.81
Cost of packing and crating	72,607.84
Total	322,592.65
Cost of transportation on account of Military Telegraph Line in Alaska, exclusive of operation of the transport *Burnside*	35,080.41
Cost of drayage	78,924.82
Cost of street car and ferry tickets	25,675.15

Consolidation of disbursing offices settling railroad and steamship companies' transportation accounts.—The policy of the Quartermaster's Department having been established that it was to the interest of the public service to decrease, so far as practicable, the number of disbursing offices charged with the settlement of railroad and steamship accounts and to confine such settlements to as few offices as practicable, under the provisions of Circular No. 14, June 1, 1912, the office of the depot quartermaster, New York City, was discontinued as a disbursing office for the settlement of such class of transportation accounts, to take effect on July 1, 1912. All transportation accounts heretofore settled by that office were transferred for settlement to the office of the depot quartermaster, Washington, D. C. Effective with July 1, 1912, this leaves only four offices designated for the settlement of such accounts, namely: The depot quartermaster, Washington, D. C.; Chief quartermaster, Central Division, Chicago, Ill.; deport quartermaster, St. Louis, Mo.; depot quartermaster, San Francisco, Cal.

As stated above, this action is believed to be to the best interests of the service, requiring the distribution of transportation funds among only 4 disbursing offices instead of 15 as formerly, and thereby enabling the office of the Quartermaster General to keep a close check on the disbursements and balances on account of funds available for transportation. The accounts are being settled in a prompt and satisfactory manner, both to the Quartermaster's Department and to the various transportation carriers interested. No serious complaint on the subject of the consolidation of disbursing offices has been received from the carriers concerned.

Schedule of land-grant and bond-aided railroads of the United States.—General Orders, No. 41, War Department, 1907, publishing a complete list of land-grant and bond-aided railroads of the United States, with the laws applicable thereto and a map showing in colors the various common carriers which had been granted lands or bonds by the Government, and in return for which, transportation services on Government account were performed at reduced rates, had become obsolete due to various changes under decisions of the courts and the accounting officers of the Government, to such an extent as to necessitate the preparation of revised information on the subject.

In view of the conditions shown above, this office, with the approval of the Secretary of War, prepared a schedule of land-grant and bond-

aided railroads, under the conditions existing at the date of preparation, June 1, 1912, and promulgated same in Circular 16, Quartermaster General's Office, 1912, which is now nearing completion and will be ready for distribution at an early date, under the supervision of the Public Printer, Government Printing Office. Due to unforeseen delays, and the necessity for repeated revision in connection with the lithographing and printing of the circular and map to be published as a part thereof, the publication of the circular has been delayed, but, as stated above, it will be available for issue at an early date. This circular cancels all previous publications of the War Department on this subject, and will be of great assistance in connection with the settlement of transportation accounts by disbursing officers, as well as to the common carriers concerned. The necessity for publication of revised information on this subject has been apparent for a number of years, and the publication of this circular will be to the best interests of all concerned.

Freight and passenger land-grant equalization agreements and list of carriers participating.—Under the provisions of General Orders, No. 154, War Department, 1908, there was published for the information and guidance of officers of the Quartermaster's Department and others concerned a list of the railroads and other common carriers who had agreed to accept for the transportation of Government freight and passengers the lowest net cash rates available to the Government via longest land-grant line. The agreements, both freight and passenger, as shown in this general order of the War Department, had been executed by the common carriers concerned during the years 1898, 1899, 1900, and 1901, and due to changes made by the carriers concerned and changed conditions, had become obsolete. In order to bring this question of agreements up to date it was decided that a revised list of agreement carriers should be published for the information and guidance of all concerned. In accordance with this decision, Circular 23, Quartermaster General's Office, 1911, was issued. This circular sets forth in detail the form of agreement on both freight and passenger business, with exceptions thereto applicable to each common carrier in the United States, a list of the common carriers participating, and other details, which simplify to a marked extent the settlement of all transportation accounts, both freight and passenger, by disbursing officers of the Quartermaster's Department. The information contained therein is of especial value both to the Quartermaster's Department and to the common carriers involved, and it is the intention of this office, should any change occur therein, to promptly promulgate same for the information of all concerned, by circular amending the provisions of Circular 23, if necessary.

REMOUNT SERVICE.

Animals purchased by the Quartermaster's Department during the fiscal year 1912.

Kind.	Number.	Total cost.	Average cost, 1912.	Average cost, 1911.
Cavalry horses	481	$86,869.90	$180.60	$163.65
Artillery horses	73	18,920.00	259.18	210.81
Young horses (remounts)	1,700	219,504.59	129.12	136.65
Polo ponies	20	2,494.96	124.75	.....
Draft horses	5	1,500.00	300.00	238.46
Draft mules	507	116,611.75	230.00	228.56
Pack mules	260	54,383.50	209.16	205.69
Riding mules	28	5,862.75	209.38	226.29

The average cost of mounts for the year is $144.15.

During the year 272 animals were condemned, sold, etc., and 721 died, a total of 993 animals. There remained on hand in the United States June 30, 1912, cavalry horses, 10,878; artillery horses, 3,191; draft horses, 971; riding horses, 1,721; draft mules, 5,913; riding mules, 382; pack mules, 1,834; bell mules, 19; dogs, 155; total, 25,064.

REMOUNT DEPOTS.

Fort Keogh Remount Depot, Fort Keogh, Mont.:		
Animals on hand July 1, 1911		794
Animals received during fiscal year 1912		867
Total on hand and received		1,661
Issued during the year:		
Cavalry horses	426	
Artillery horses	271	
Riding horses	110	
Total issued	807	
Sold to officers	12	
Died	53	
Total	65	
Total disposed of		872
Balance on hand June 30, 1912		789
Fort Reno Remount Depot, Fort Reno, Okla.:		
Animals on hand July 1, 1911		487
Animals received during fiscal year 1912		1,034
Total on hand and received		1,521
Issued during the year:		
Cavalry horses	730	
Artillery horses	114	
Riding horses	63	
Total issued	907	
Sold to officers	51	
Died	38	
Otherwise disposed of	12	
Total	101	
Total disposed of		1,008
Balance on hand June 30, 1912		513
Front Royal Remount Depot, Front Royal, Va.:		
Animals on hand July 1, 1911		206
Animals received during fiscal year 1912		341
Total on hand and received		547
Issued during the year:		
Cavalry horses	111	
Artillery horses	1	
Riding horses		
Total issued	112	

Front Royal Remount Depot, Front Royal, Va.—Continued.			
Issued during the year—Continued.			
Sold to officers	13		
Died	26		
Total		39	
Total disposed of			151
Balance on hand June 30, 1912			396
Summary of remount depots:			
On hand July 1, 1911			1,487
Received during fiscal year 1912			2,242
Total on hand and received			3,729
Issued during the year:			
Cavalry horses	1,267		
Artillery horses	386		
Riding horses	173		
Total issued		1,826	
Sold to officers	76		
Died	117		
Otherwise disposed of	12		
Total		205	
Total disposed of			2,031
Balance on hand June 30, 1912			1,698

The farming operations incident to the maintenance of the grazing facilities at the depots promise this year to produce a large part of the forage consumed.

At Front Royal condemnation proceedings have been concluded in nearly all cases, the fencing is under way and the first building, the veterinary hospital, is approaching completion.

The continued efforts of the officers at remount stations to interest the breeders of the country in improving the type of horse for the mounted service is beginning to show in the better quality of some of the young horses offered.

The interest shown in the proposed scheme of the Agricultural Department to furnish improved stud service under an agreement of sale to the Government has been very marked. This scheme has been tentatively put into effect in the vicinity of Front Royal, Va., using the five stallions recently presented to the Government, and a sufficient number of suitable mares were presented and bred under the agreement.

The supply of 1,580 horses for two regiments of cavalry and 87 horses for three regiments of infantry returning from the Philippine Islands, when completed, will have stripped the depots of all available horses in addition to the purchase of 969 mature cavalry horses at a cost of $166,834.40, or an average of $172.17 each.

J. B. ALESHIRE,
Quartermaster General, U. S. Army.

The SECRETARY OF WAR.

REPORT OF THE COMMISSARY GENERAL.

WAR DEPARTMENT,
OFFICE OF THE COMMISSARY GENERAL,
Washington, D. C., October 3, 1912.

SIR: I have the honor to submit the following report of the operations of the Subsistence Department for the fiscal year ending June 30, 1912:

RESOURCES, DISBURSEMENTS, AND BALANCES.

The following statement exhibits the aggregate fiscal resources and disbursements of the department and the balances at the close of the fiscal year 1912:

REPORT OF FINANCIAL TRANSACTIONS OF THE SUBSISTENCE DEPARTMENT DURING THE FISCAL YEAR ENDING JUNE 30, 1912.

Appropriation, "Subsistence of the Army, 1912."

[Act of Mar. 3, 1911; 36 Stats., 1045.]

Resources:	
Appropriation[1]	$9,033,579.40
Receipts	3,165,319.34
	12,198,898.74
Disbursements	11,734,784.12
Balance	464,114.62
	12,198,898.74

RECEIPTS.

Sales to officers and enlisted men	2,282,193.22
Sales to civilian employees	284,431.38
Sales to officers and enlisted men, Organized Militia	10,998.02
Sales to bureaus and departments of the Government	128,988.21
Sales, miscellaneous	5,799.41
Collections, account errors, gains, reclamations, refundment, transportation	34,594.11
Meals on transports	123,930.50
Transfer settlements made by Treasury Department, account supplies furnished various bureaus and departments of the Government	290,489.03
Miscellaneous deposits made to credit of appropriation, account paymasters' collections, etc	3,895.46
	3,165,319.34

DISBURSEMENTS.

Ration articles, including savings and other authorized issue articles purchased	8,185,477.06
Steward's stores	175,947.72
Hot coffee for troops traveling	7,777.73
Meals for recruiting parties, etc	253,920.88
Sales stores	1,697,290.88
Bake ovens and apparatus	9,850.74
Cooking apparatus and field ranges	100,692.62
Subsistence property	70,131.17
Commutation of rations to cadets, West Point	55,062.00
Commutation of rations to enlisted men	631,773.59

[1] See note regarding deficiency appropriation following statement of "Balances."

Compensation to civilian employees, Subsistence Department	$246,150.93
Compensation to civilian employees, transport service, and board wages	185,589.71
Extra-duty pay to enlisted men detailed on duty in the Subsistence Department, and as instructor cooks at the schools for bakers and cooks, and as cooks and mess stewards at recruit depots, and as bakers and assistants	70,555.62
Prizes to enlisted graduates of the Army schools for bakers and cooks	545.00
Incidental expenses	40,342.36
Correction of errors and transportation turned over to Quartermaster's Department	1,972.04
Transfer settlements made by Treasury Department, account of supplies received from various departments of the Government	1,704.07
	11,734,784.12

* * * * * * * *

Of the total amount appropriated for "Relief of sufferers from floods in the Mississippi and Ohio Valleys," $20,000 was, by joint resolution No. 47, approved August 2, 1912, authorized to be expended for tents, together with temporary rations, for care and relief of American citizens (refugees from Mexico) seeking refuge in El Paso, Tex., and adjacent portions of the United States. Of this sum, $15,000 was apportioned by the Secretary of War for the purchase of rations. Said sum was placed to credit of disbursing officers on July 31, August 7 and 24, and September 30, 1912, from the balance of $161,278.97 in the United States Treasury on June 30, 1912, to the credit of this department.

Reports of the disbursement of said amount not having been received at this office in time to be included in the report for the fiscal year ending June 30, 1912, a report thereof will be included in subsequent reports.

Statement of expenditures, etc., for relief of sufferers from floods, Mississippi and Ohio Valleys overflow, in 1912.

Month in which expended.	Purpose for which expended.						Appropriation from which expended.
	Stores purchased for issue.	Salaries, subsistence of employees.	Commutation of rations of enlisted men.	Property.	Miscellaneous.	Total.	
April	$82,889.75	$548.46	$385.50	$45.98	.....	$83,869.69	Subsistence of the Army, 1912.
May	149,188.17	94.44	237.00	.....	.....	149,519.61	Do.
Do	333,841.12	417.89	841.50	.....	$139.15	335,239.66	Relief of sufferers from floods, Mississippi and Ohio Valleys.
June	83,550.18	94.16	483.00	.....	84.55	84,211.89	Do.
July	17,925.13	72.50	105.00	.....	.....	18,102.63	Do.
August	5,607.25	37.50	93.00	.....	.....	5,737.75	Do.
Totals	673,001.60	1,264.95	2,145.00	45.98	223.70	676,684.23	

Value of stores purchased for distribution	$673,001.60
Value of stores taken up by commissaries as gain	7,139.71
Total	680,141.31

Distributed by States as follows:

Kentucky	$9,985.98
Missouri	15,012.78
Tennessee	46,894.93
Arkansas	129,391.22
Louisiana	160,891.76
Mississippi	317,964.64
Total	680,141.31

Of the amount expended from appropriation, "Subsistence of the Army, 1912," the sum of $233,379.30 has been reimbursed from the appropriation for "Relief of sufferers from floods in the Mississippi and Ohio Valleys." Request has been made for reimbursement of the balance, viz, $10.

THE UNITED STATES ARMY TRANSPORT SERVICE.

DEBITS.

Salaries of civilian employees and board wages (including employees of office of subsistence superintendent in work pertaining to the transport service)	$185,815.31
Cost of food furnished in the several messes	493,419.81
Commutation of rations to patients in hospital	4,874.10
Value of ice dropped as wastage	5,888.53
Losses on stores due to deterioration	1,067.32
Losses on property	23.30
Value of property expended	1,292.90
Value of miscellaneous issues	3,874.62
	696,255.89

CREDITS.

Cash collections for meals	96,647.63
Amounts paid and collectible on account of meals furnished bureaus and other departments of the Government	41,678.90
Miscellaneous sales, correction of errors, etc	981.26
Gains in stores	944.67
Credit given for value of issues to troops, civilian employees, and general prisoners	139,370.09
	279,622.55

SUMMATION.

Total debits	696,255.89
Total credits	279,622.55
Net cost	416,633.34

STATEMENT OF ISSUES MADE DURING FISCAL YEAR 1912.

Garrison, travel, haversack, and trail rations (28,178,205), average cost 23.7598+ cents	$6,695,092.98
Filipino rations (2,208,016), average cost 15.54336+ cents	343,200.08
Emergency rations (12,310)	4,283.13
Articles other than ration articles issued	116,750.83
Ice issued	49,319.79
Recruit kits issued	51,328.21
Housewives issued	484.14
Gratuitous issues to destitutes, etc	161.67
Reimbursement issues	4,624.02
Issues to Indian prisoners of war	13,156.69
Total value of issues	7,278,401.54

Number, value, and average cost of rations, by geographical divisions, etc., issued during the fiscal year 1912.

Division.	Number of rations.	Value.	Average cost (cents).
United States [1]	21,251,996	$4,966,511.29	23.37
Alaska	368,145	131,033.00	35.59
Hawaii	887,797	225,939.66	25.45
Porto Rico	221,372	64,164.97	28.98
Transports	594,861	138,232.57	23.24
Philippines (American)	4,854,034	1,169,211.49	24.09
Total and average cost (American)	28,178,205	6,695,092.98	23.76
Philippines (native)	2,208,016	343,200.08	15.54
Canal Zone	202,995	63,311.56	31.19

[1] Includes Canal Zone.

Statement showing average cost of the ration with and without transportation.

The average cost of the actual food included in the garrison (American) ration during the fiscal year was as follows:

	Cents.
At all posts or stations in the United States	23.70
At all posts or stations in the Philippines and on transports	23.99
At all posts or stations in the United States, Philippines, and on transports	23.76

The Quartermaster General reports that during the fiscal year the cost of transportation charged against this department was $259,002.98. This includes the cost of transportation for the ration articles, sales articles, and property. Charging this amount to the total cost of the garrison ration issued, it gives for the past fiscal year an increased cost for each ration of 0.9198 cents, thus making the cost of the garrison ration, delivered, including food and transportation, as follows:

	Cents.
At all posts or stations in the United States	24.6198
At all posts or stations in the Philippine Islands and on transports	24.9098
At all posts or stations in the United States, Philippine Islands, and on transports	24.6798

Statement showing the yearly and per diem cost of subsistence per man in the United States and the Philippines.

	Number of rations.	Daily average number of men.	Net cost.	Average cost for year.	Average cost per diem (cents).
Cost in United States	22,748,108	62,324	$6,675,117.45	$107.10	29.34
Cost in Philippine Islands	7,638,053	20,924	2,269,703.74	108.48	29.72

The above gives expenditures made in the United States and Philippines, respectively, from appropriation for "Subsistence of the Army, 1912," and includes cost of rations issued, commutation of rations of all kinds, ice, meals, clerical hire, extra-duty pay, net cost of transport service, and the net losses of stores and property; in other words, indicates the actual cost per man per day in the United States and Philippine Islands as far as subsistence is concerned.

Losses.

DEBITS.

Ordinary wastage and losses in issue and transportation		$29,141.86
Condemnation of stores from climatic causes, etc		22,676.48
Theft		93.38
Property expended and worn out in the Government service		96,466.44
Total debits		148,378.16

CREDITS.

Reclamations made from carriers and contractors	$7,481.37	
Receipts from sales at auction of deteriorated supplies	5,799.41	
Gains on stores account issues	15,438.41	
Gains on property	3,251.34	
Total credits		31,920.53
Net losses		116,457.63

The net loss of $116,457.63 is $\frac{1}{100}$ of 1 per cent of the total disbursements, amounting to $11,758,805.06.

The losses above referred to occurred in geographical divisions, as follows:

United States	$90,407.12
Philippine Islands	46,849.44
Alaska	4,555.70
Transports	2,385.80
Hawaii	3,622.48
Porto Rico	557.62
Total	148,378.16

INCREASED ALLOWANCE FOR TROOPS ON TRANSPORTS.

When the allowance for troops on transports was fixed at 24 cents a day this sum was 50 per cent more than the cost of the ration. But later on, owing to the increase in all food articles, it was found necessary to increase the food allowance on transports. So to meet the changed conditions the regulations were modified to read:

Food for troops traveling on United States Army transports will be prepared from the articles of subsistence stores which compose the ration for troops in garrison, varied by the substitution of other articles of authorized subsistence stores, the total daily cost per man of the food consumed not to exceed 20 per cent more than the current cost of the garrison ration, except on Thanksgiving Day and Christmas, when 60 per cent increase over the same current cost is authorized.

It was considered advisable to fix the amount to be expended for the ration on transports by an increase of a certain per cent on the garrison ration rather than to definitely state the price, as has heretofore been done. By adopting this percentage increase it was contemplated further change in this provision would not be necessary, even if the cost of the ration should rise or fall, as the amount to be expended would rise or fall with the cost of the ration, and would thus regulate itself.

TRANSPORT SERVICE IN ALASKA.

The method of employing members of the steward's department on river steamers in Alaska has been changed. Formerly men were employed in Seattle and sent to Fort Gibbon, Alaska, before the opening of the river to navigation, and at the end of the open season these men were returned to Seattle for discharge. Transportation, travel expenses, and pay from date of employment to date of discharge were given them. This involved considerable expense, and an effort was made to reduce the cost of operating these steamers. Authority is now given to employ crews for certain of the steamers in the vicinity of the post, and the services of these men are not to begin until the steamers are in commission and terminate when placed out of commission. No transportation or traveling expenses are to be allowed members of the crew. Under the arrangement in operation at present, if a man should prove worthless or unsuited for the service he can be discharged for cause and without loss to the Government. It is estimated that a saving of over $5,000 will be made annually by the change in the method of employment.

SAVINGS ON BEEF IN THE WESTERN DIVISION.

At posts in the Western Division the contract prices for fresh beef for the fiscal year 1913, as compared with the fiscal year 1912, show that at 17 posts the prices for beef are lower, at 6 posts higher, and at 7 posts the same price; for fresh mutton at 17 posts the prices are lower, at 6 posts higher, and at 1 post the same price. The contracts for the fiscal year 1913 are very favorable to the Government, and considerably lower in many instances than the contracts which expired on June 30, 1912, although fresh meats are higher at present than at any time during the past 30 years. There is a reduction of 1 per cent per pound for fresh beef and 3 cents per pound for fresh mutton at Forts Davis, Gibbon, and St. Michael, Alaska, and is the lowest contract price obtained since these posts were established. In many cases where the price for beef appeared to be excessive, bids were rejected and some of the posts were supplied from Seattle, Wash., as a large saving could be effected by contracting for delivery at Seattle and distributing to posts as required. This plan proved very satisfactory, and effected a saving of $12,632.72, and caused the contractors to submit lower bids for the fiscal year 1913. The beef required at Seattle was purchased in Omaha and shipped on from there. After deducting the cost of transportation, icing, and expenses incident to purchase, there was a large net saving to the department, as stated above. While it is the policy of the Subsistence Department to procure stores as near the point of consumption as practicable, considering their cost and the cost of transportation, the case of Seattle was an exceptional one, and the saving justified the action in procuring the supplies from a distant point.

ANALYSIS OF EMERGENCY RATIONS.

Samples of emergency rations packed in 1908 were taken from a lot stored in the United States and from a lot stored in the Philippine Islands, and one can from each lot was submitted to test.

The analyses showed that the two samples were practically the same. The sample from the lot stored in the United States showed the following results:

	Per cent.
Protein	25.44
Amido bodies	.87
Ash	3.05
Moisture	3.00
Fat	28.45
Carbohydrates (by difference)	39.19
Total	100.00

The sample from the lot stored in the Philippine Islands showed the following results:

	Per cent.
Protein	25.56
Amido bodies	.68
Ash	3.02
Moisture	2.87
Fat	28.68
Carbohydrates (by difference)	39.19
Total	100.00

The rations showed no sign of deterioration and are in a perfectly edible condition.

Statement showing components of a ration and units of quantities for one ration during the fiscal years 1890 to 1912.

Components of ration.	Fiscal years.									
	(1) 1890		(2) 1891 to 1899		(3) 1900		(4) 1901 to 1907		(5) 1908 to 1912	
	Quantity.	Unit.	Quantity.	Unit.	Quantity.	Unit.	Quantity.	Unit.	Quantity.	Unit.
Beef, fresh	14	Ounce.	14	Ounce.	14	Ounce.	14	Ounce.	14	Ounce.
Bacon, issue	3.6	Ounce.	3.6	Ounce.	3.6	Ounce.	3.6	Ounce.	3.6	Ounce.
Flour, issue	18	Ounce.	18	Ounce.	18	Ounce.	18	Ounce.	18	Ounce.
Baking powder										
Beans	1.2	Ounce.	1.2	Ounce.	1.2	Ounce.	1.2	Ounce.	.08	Ounce.
Rice	.8	Ounce.	.8	Ounce.	.8	Ounce.	.8	Ounce.	1.2	Ounce.
Potatoes, fresh			12.8	Ounce.	12.8	Ounce.	12.8	Ounce.	.8	Ounce.
Onions, fresh			3.2	Ounce.	3.2	Ounce.	3.2	Ounce.	16	Ounce.
Prunes					.6	Ounce.	.48	Ounce.	4	Ounce.
Jam									.384	Ounce.
Apples, evaporated					.7	Ounce.	.56	Ounce.	.64	Ounce.
Peaches, evaporated					.7	Ounce.	.56	Ounce.	.128	Ounce.
Coffee:									.128	Ounce.
Green	1.6	Ounce.	1.6	Ounce.	1.6	Ounce.	1.6	Ounce.		
Roasted and ground										
Sugar	2.4	Ounce.	2.4	Ounce.	2.4	Ounce.	3.2	Ounce.	1.12	Ounce
Milk, evaporated									3.2	Ounce.
Vinegar	.32	Gill.	.32	Gill.	.32	Gill.	.32	Gill.	.5	Ounce.
Pickles, cucumber									.08	Gill.
Salt	.64	Ounce.	.64	Ounce.	.64	Ounce.	.64	Ounce.	.08	Gill.
Pepper, black	.04	Ounce.	.04	Ounce.	.04	Ounce.	.04	Ounce.	.64	Ounce.
Cinnamon									.04	Ounce.
Lard									.014	Ounce.
Butter									.64	Ounce.
Sirup									.5	Ounce.
Soap	.64	Ounce.	.64	Ounce.	.64	Ounce.	.64	Ounce.	.32	Gill.
Flavoring extract, lemon									.014	Ounce.

The quantities shown in the above table of the components of the ration are not the allowance of those components, but the quantities of those components which would be issued when the proper proportion of the substitutive equivalent is also issued. The table is stated in this way so as to form the basis of computing the ration in accordance with the way in which it is usually issued.

Statement showing approximate cost of the ration from 1890 to 1907, and the actual cost from 1908 to 1912.

Fiscal year.	Cost per ration.	Fiscal year.	Cost per ration.	Fiscal year.	Cost per ration.
	Cents.		*Cents.*		*Cents.*
1890	13.18	1898	12.81	1906	15.16
1891	14.71	1899	13.62	1907	15.74
1892	16.05	1900	16.97	1908	18.66
1893	15.94	1901	16.18	1909	21.05
1894	15.10	1902	16.24	1910	21.44
1895	14.42	1903	17.56	1911	23.35
1896	14.15	1904	17.33	1912	23.78
1897	12.51	1905	16.18		

EXAMINATION OF FRUITS AND VEGETABLES IN TIN CONTAINERS.

At the convention of the National Canners' Association, held in Milwaukee in 1911, a resolution was passed establishing a committee of scientific research, and the Commissary General was appointed a member of the committee. The work intrusted to this committee was the examination of certain kinds of fruits and vegetables in tin containers.

The National Canners' Association made agreement with the Institute of Industrial Research for the packing of various kinds of fruits and vegetables in tin containers, and in the spring of 1911 an experimental pack was made in different containers of the various items by different packers throughout the country.

In November, 1911, samples of all of the varieties of the experimental pack were opened at the Institute of Industrial Research, at which time an examination was made of the containers and contents, and then samples were submitted to the Bureau of Chemistry of the Department of Agriculture, the Institute of Industrial Research, and the laboratory of the American Can Co. Analyses were made of these articles and a report of the results submitted by each of the three institutions making the examination.

The committee of scientific research met on March 16, 1912, to consider the figures submitted and made a report to the National Canners' Association of its findings, and embodied therein certain recommendations based on the figures submitted by the chemists.

While the report of the committee was published in condensed form in The Canner and Dried Fruit Packer of April 11, 1912, the committee decided to withhold from publication the figures obtained by the chemists in their analyses until further tests could be made of certain articles which need additional examination, and others which were not included in the first pack. In order to provide for these further tests an additional experimental pack is being made during the present year, to be examined some time in the coming fall, at which time it is thought that more definite and certain recommendations can be made.

CHANGE IN METHOD OF PROCURING SUBSISTENCE SUPPLIES.

The law governing the purchase of Army supplies is contained in the acts of April 23, 1904 (33 Stats., 268), and June 12, 1906 (34 Stats., 258). The Subsistence Department, in carrying out these laws, was at times embarrassed to know the proper procedure under the circumstances, and especially the meaning of the phrase "interests of the Government," which occurred in the law. There had been no authoritative construction in this regard, and in justice to all it was considered that one should be made for future guidance. The Secretary of War made a decision in the matter on June 15, 1911, and necessary instructions were issued on the subject.

A mistaken interpretation seemed to have been placed upon the instructions as approved by the Secretary of War; and in this connection it may be stated that it is the policy of the Subsistence Department to have purchases, especially ration articles, made by its own officers in the principal commercial centers where purchasing commissaries of the Subsistence Department are located, provided articles of suitable quality can be purchased as cheaply, including cost of transportation and drayage to the post, as they can be purchased at or near the post. And particularly canned meats should be procured in large centers where the meat is actually canned and may be subjected to inspection during the process of manufacture by experts of the Subsistence Department.

In case of sales stores (the cost of which is returned to the Government, but not the cost of the transportation), it is advisable to purchase in the immediate vicinity if there is a good market and the price and quality justify it.

But it was not contemplated by this office that post commissaries would perform the duties required in making such purchases if, in the opinion of their division commander, their services could not well be spared, and their experience and judgment did not justify them in making purchases and inspections, all of which is considered as within the control of the division commanders, who are, under the instructions of the Secretary of War, to decide all questions arising within their divisions which can properly be settled by them under existing law and regulations.

To carry into effect the above plan, the following instructions governing the procurement of subsistence supplies were approved by the Secretary of War on May 1, 1912:

FOR THE UNITED STATES AND ALASKA.

When an issue or sales article of suitable quality can be purchased at an Army post or in its immediate vicinity and delivered at the post at less cost to the Government than from a purchasing station, including cost of transportation and drayage to the post, such article shall be purchased locally.

When an article is not procurable as above, it shall be obtained from a regular purchasing station, which station shall be the one at which the article can be purchased cheapest, considering the cost price of the article at the station plus the cost of transportation, drayage, etc., to the post in question.

Exception to the foregoing rules will be made in the items of issue bacon, canned corned beef, canned fresh roast beef, and canned

corned-beef hash, which will ordinarily be supplied from the large meat centers, where expert meat inspection is maintained by the Subsistence Department, on calls made on the purchasing commissary, Chicago.

FOR THE PHILIPPINE ISLANDS.

Issue, sales, and exceptional articles will be purchased in the Philippine Islands when they can be obtained there to the advantage of the Government.

The point of supply for articles which can not be thus procured will be fixed from time to time by the Commissary General on the recommendation of the chief commissary of the Philippines Division.

GENERAL.

Nothing in the foregoing will be construed so as to prevent the purchase by any commissary acting under competent orders in time of war or stress, at any time and in any market, of such supplies as are necessary to meet the wants of troops supplied by him.

POST AND FIELD BAKERIES.

Post bakeries are now operated by the Subsistence Department under the direction of the commissary. The change from the old system to the new has proven very satisfactory. The quality of the bread has been uniformly excellent, and the companies receive their savings monthly direct from the commissary. The system saves a great deal of clerical work, as it is not necessary to appoint a post treasurer, maintain bakery funds at posts, and have the post council of administration act on bakery accounts.

Tentage and stoves are to be provided for all field bakeries to be held in reserve, so that the equipment prescribed will be complete when the bakery is ordered into active service. The articles are to be procured from the Quartermaster's Department and accounted for by the officer in charge on Form No. 141 of that department.

ERECTION AND REPAIRS OF OVENS.

An expert knowledge of ovens is necessary to properly install or repair them. In the past labor which was not skilled was used at times to do this work at posts with the result that the work proved unsatisfactory, as difficulties usually arose later, due to the lack of knowledge required to properly install or repair the ovens. To overcome this difficulty, a post commissary sergeant, thoroughly competent to superintend the erection and repair of ovens, has been assigned to each division, who, when required, was able to do this class of work at the various posts in the division, and gratifying results have followed.

FIELD BAKERIES.

Under General Orders, No. 105, of August 1, 1911, the organization, personnel, and equipment of field bakeries was provided for on the recommendation of this office, and this office also recommended that field bakeries should be established at the three training schools for

bakers and cooks and also in Manila, to be designated, respectively, as field bakeries Nos. 1, 2, 3, and 4, all the necessary equipment for the bakeries being assembled at those places, and a skeleton personnel for the field bakery arranged for from the schools; and in the event of occasion arising, the equipment of a field bakery or any portion thereof, with its organized skeleton personnel, could at once be sent where needed within the limits of the respective division commanders. This has enabled the division commanders to make the necessary arrangements for providing fresh bread at the various maneuver camps during the past year.

TRAINING SCHOOLS FOR BAKERS AND COOKS.

Since the establishment of the training schools for bakers and cooks at Fort Riley, Kans., Washington Barracks, D. C., and the Presidio of San Francisco, Cal., 834 bakers and 1,741 cooks and 52 mess sergeants have been graduated. Of this total, 131 bakers and 253 cooks and 52 mess sergeants were graduated during the fiscal year 1912 and 703 bakers and 1,488 cooks during the previous years.

The number graduated during the present year at the different schools was as follows: At Fort Riley, Kans., 44 bakers, 140 cooks. and 39 mess sergeants; at Washington Barracks, D. C., 19 bakers, 42 cooks, and 4 mess sergeants; and at the Presidio of San Francisco, Cal., 68 bakers, 71 cooks, and 9 mess sergeants. The total number of officers who have graduated during the present year at Fort Riley is 6 commissary officers and 1 officer of the line and during previous years 24 commissary officers and 78 officers of the line.

In order to have a uniform system as to the number of terms and the number of classes per year at these schools, the regulations were modified so as to require that at all the schools there should be three terms per year and four classes per term.

The Organized Militia has been granted authority to send a limited number of their members to the schools for instruction, and have taken advantage of the opportunity offered.

Upon request of the Navy Department, a number of enlisted men of the Marine Corps were authorized to attend these schools. It is advantageous to have these men trained in the preparation of the ration, so that when the Marines are serving with the Army they may have men trained in the use of the ration furnished by the commissary.

The courtesies of the school at the Presidio of San Francisco were extended to a representative of the Bureau of Chemistry of the Agricultural Department to enable him to secure information in connection with the study of the method of baking bread in the United States Army. Under existing regulations each one of the schools is made the headquarters of a field bakery.

There is no question about the value to the service of the schools for bakers and cooks, and after proper training and graduation the bakers can be appointed to vacancies in the Service Corps already established, and the efficiency of the service be promoted thereby in the best possible way.

ALAMO ATTACHMENT.

Capt. O. J. Charles, Seventeenth Infantry, has invented an attachment for the field range which promises to add greatly to the cooking space, effectiveness, and life of the range, and can also be used for the field oven in such a manner as to eliminate the pits and trenches, equalize the heat, economize on fuel, and preserve the oven from burning out. It adds little to the weight and nothing to the bulk of the range when packed. Extensive tests have been made with the Alamo attachment, which proved effective and satisfactory.

PAY OF ACTING ASSISTANT COMMISSARIES.

Section 1261 of the Revised Statutes provides that "the pay of an acting assistant commissary shall be $100 in addition to his rank." This authorization is a continuation of the law which first took effect in 1818, and the amount allowed then to acting commissaries was $20 per month in addition to their pay, but by the law of 1821 this was changed, making it $10 per month in addition to their pay, and then by subsequent act this amount was reduced to $100 per year.

When the law was first passed it was the practice to allow officers who were accountable for property an additional compensation, this allowance also extending to company commanders, but the allowance of all excepting an acting assistant commissary was discontinued years ago. The allowance was granted prior to the time post commissary sergeants were authorized. But now that each regiment has a regimental commissary, and there are three battalion quartermasters and commissaries authorized by law who were specially created to perform the duties of the Subsistence Department, and in view of the decision of the comptroller that an officer occupying the position of either regimental commissary or battalion quartermaster and commissary can not receive the extra compensation, recommendation was made for the repeal of the provisions of this statute, which authorizes pay to acting commissaries, and its revocation will save about $20,000 a year.

FRESH BEEF AND MUTTON IN THE PHILIPPINES.

Frozen fresh beef and mutton were supplied from Australia under contract. The prices were 8.6588 cents per pound for beef and 6.9588 cents per pound for mutton.

Experiment was made with frozen beef that had been in cold storage for several years, a number of quarters of the regular beef received under contract having been put aside for the test. Bacteriological and chemical analyses were made from a quarter of beef placed in cold storage on April 20, 1908, to see if any toxic substance had developed, also to determine the nutritive value of the meat.

The tests showed the following:

Bacteriological examination.

Average count per c.c. of meat juice	500 colonies.
Kind of bacterial found	Molds, sporo germos bacilli belonging to the subtilis group.
Attempt to isolate:	
B. Coli	Negative.
B. Enteritidis	Negative.
B. Anthracis	Negative.

Chemical analysis.

Loss at 100° C	68.15 per cent.
Mineral matter	1.28 per cent.
Proteids	26.25 per cent.

The meat appeared to be perfectly sound, although it was of poor quality.

FRESH VEGETABLES IN THE PHILIPPINES.

Three contracts were made for fresh vegetables during the year. The first one covered the period from July 1, 1911, to October 31, 1911. The price was 2 cents per pound for potatoes, and 1.985 cents per pound for the new crop of onions and 2.45 cents per pound for the old crop. From November 1, 1911, to February 29, 1912, the price was 1.95 cents per pound for potatoes and 2 cents per pound for onions. From March 1 to June 30, 1912, the price was 2.45 cents per pound for potatoes and 2.6 cents per pound for onions. The prices ranged a shade lower than those of the previous year.

CONSOLIDATION OF OFFICES OF CHIEF COMMISSARY, PHILIPPINES DIVISION, AND DEPOT COMMISSARY, MANILA.

To increase the efficiency and reduce the expense of the Subsistence Department in the Philippines, the offices of the chief commissary of the Philippines division and the depot commissary at Manila were consolidated. Considerable difficulty was experienced in arriving at the most suitable expression of the relations between the chief and the officers of the depot, but after some tentative trials orders were formally issued making all officers assistants, and as such subject to assignment by the chief. While a careful and thorough plan was worked out for the administration of affairs, it required several months to get the new order of things running smoothly. The result is that the Subsistence Department is now on an economical and efficient basis; and in commenting on the conditions existing and of Col. Kniskern's efforts, the commanding general of the division stated in a communication addressed to the Commissary General under date of June 28, 1912:

> He has rendered most able and capable service, and I believe his department on a more economical basis than any other. The service of his department has been most satisfactory, and I consider it perfectly efficient.

CONSOLIDATION OF SUBSISTENCE DEPARTMENT INTO THE QUARTERMASTER CORPS.

The Subsistence Department, along with the Quartermaster's Department and the Pay Department, under the act of August 24, 1912, is consolidated into the Quartermaster Corps, and thus passes out

of existence. The Subsistence Department as it now exists was created in 1818, after many previous trials and makeshifts which had proven unsatisfactory. It continued from 1818 to 1861 practically in the same form as when established and under the same chief—Col. George Gibson—as Commissary General with the rank of colonel. Changes occurred in the department in the following years: 1838; 1847, during the Mexican War; 1850; 1861, soon after the outbreak of the Civil War; 1863; 1865; 1873; 1874; 1898, during the War with Spain; and in 1901, when there was a radical reorganization and a large increase of the Army.

Since the close of the Civil War suggestions have been made from time to time to effect the consolidation of the three departments now consolidated by the law of 1912, but the time to effect such change did not seem opportune until the present, when modern business methods indicated that such consolidation was both feasible and desirable from the standpoint of increased efficiency and economy in administration. While some of the officers and members of the civilian contingent of the department were of the opinion that the proposed legislation might affect their personal interests, they exhibited a commendable and patriotic spirit in not offering any objection to the proposed legislation, recognizing the force of the argument presented by the tendency of modern business developments.

When first organized the Subsistence Department consisted of a Commissary General, with the rank of colonel, and several assistants. In the course of time the importance of the work performed by and the responsibilities placed upon the department warranted the increase of the rank of the Commissary General to that of brigadier general, which was done on February 29, 1863, and that rank has been held through the administrations of Commissary Generals Taylor, Eaton, Shiras, Macfeely, Du Barry, Hawkins, Morgan, Sullivan, Cushing, Bell, Nash, Eagan, Weston, and the present chief. And now, when the department is about to cease to exist, it consists of 1 Commissary General, with the rank of brigadier general; 3 Assistant Commissary Generals, with the rank of colonel; 4 Deputy Commissary Generals, with the rank of lieutenant colonel; 9 commissaries, with the rank of major; and 27 commissaries, with the rank of captain. And embraced among its permanent officers are the following:

Commissary General: Henry G. Sharpe, brigadier general.

Assistant Commissary Generals: Edward E. Dravo, Abiel L. Smith, and David L. Brainard, with the rank of colonel.

Deputy Commissary Generals: George B. Davis, Albert D. Kniskern, Frank F. Eastman, and Charles R. Krauthoff, with the rank of lieutenant colonel.

Commissaries: William H. Hart, Alexander M. Davis, Hugh J. Gallagher, Harry E. Wilkins, Henry G. Cole, Frank H. Lawton, William R. Grove, Theodore B. Hacker, and Morton J. Henry, with the rank of major.

Commissaries: Frederic H. Pomroy, David B. Case, William Elliott, James A. Logan, jr., Julius N. Kilian, and Salmon F. Dutton, with the rank of captain.

The following officers are detailed from the line of the Army:

Capts. Herbert O. Williams, George McD. Weeks, George H. Estes, Samuel McP. Rutherford, Joseph E. Cusack, Louis H. Bash,

Alfred S. Morgan, John H. Hughes, Lambert W. Jordon, jr., Roy B. Harper, Frederick W. Coleman, Charles B. Clark, George F. Connolly, Jairus A. Moore, Tilman Campbell, William M. Connell, Milton A. Elliott, jr., Jack Hayes, Will H. Point, Christian A. Bach, and Ernest S. Wheeler.

Since its establishment, nearly a hundred years ago, the Subsistence Department has answered every call made upon it, fully meeting the responsibilities entailed by the stress of the Indian wars, the Mexican War, the Civil War, the War with Spain, the insurrection in the Philippines, the China relief expedition, and the second military occupation of Cuba, in a manner which has in general not attracted public attention, but which merited the encomium said to have been expressed by President Lincoln during a visit to Richmond early in 1865, when he is reported to have said to an officer of the Subsistence Department:

> Your department we scarcely hear of. It is like a well-regulated stomach; works so smoothly that we are not conscious of having it.

In addition to meeting the requirements which have been made upon it by the Army, the department has always rendered prompt and efficient service and afforded relief to various classes of citizens of the country who, owing to some calamity, have been subjected to distress and want; and a number of lives have probably been saved by such ready relief. The amount expended for the relief afforded from 1867 to June 30, 1912, is in excess of $14,000,000, a considerable portion of which was, of course, made from appropriations specially provided for such purpose to be expended through the Subsistence Department.

The department has followed with watchful care the increasing variety of supplies and the improvements which have occurred in the manner of living of the citizens during the years it has provided for the Army. It has established schools for bakers and cooks; secured the creation of field bakeries and equipment which excels that in use in any army; has provided for subsisting troops traveling on railroads which revolutionized the old system, and which has been for years a difficult problem; kept pace with the methods of accounting and cost keeping; adopted a system of war blanks by which stores can in time of war be accounted for in the simplest way, thus making it possible to insure as full and varied a diet for the troops as the resources of the country or available transportation make it possible to supply, and at the same time eliminating all unnecessary paper accountability. It has also been mindful of the requirements of article 52 of The Hague convention of July 29, 1899, respecting the laws and customs of war on land. This work has been accomplished by the loyal support of the officers and the civilian contingent, who have manifested at all times enthusiastic interest in their work.

The various changes which have occurred and are briefly referred to above have been fully described in the previous annual reports from this office.

Respectfully submitted.

HENRY G. SHARPE,
Commissary General.

The SECRETARY OF WAR.

REPORT OF THE SURGEON GENERAL.

WAR DEPARTMENT,
OFFICE OF THE SURGEON GENERAL,
Washington, August 20, 1912.

SIR: I have the honor to submit herewith a report upon the work of the Medical Department of the Army, together with a financial statement for the fiscal year ending June 30, 1912, and a study of the health and sanitary conditions of the Army for the calendar year 1911.

HEALTH OF THE ARMY.

OFFICERS.

The mean strength of officers was 4,225, as obtained from the reports of sick and wounded of the Medical Department, and 4,515 from the office of The Adjutant General. There were 2,522 admissions, 20 deaths, and 113.70 constantly noneffective from all causes, equal to ratios of 596.92, 4.43, and 26.91 as compared with ratios of 596.54, 3.40, and 28.35 per 1,000 for the year 1910. The constantly noneffective rate was thus slightly lower than for 1910, but the death and admission rates were higher.

The principal causes of admission in the order of their importance were influenza, 42.37; diarrhea and enteritis, 40.47; bronchitis, 40; malarial fevers, 23.20; dengue, 15.38, and appendicitis, 13.96 per 1,000.

OFFICERS RETIRED.

Thirty officers were retired on account of disability during the year, making a rate of retirement for disability of 6.64 per 1,000, as compared with 8.38 for 1910. The discharge rate for disability in enlisted men was 13.85.

The following table shows the principal causes for which retirements were made and the rank and age of the officers retired:

TABLE NO. 1.—*Retirement of officers, United States Army, year 1911, for disability, by causes and rank, grouped by ages.*

	Total.		Ages of officers, quinquennial groups.								
	Number.	Ratio per 1,000 of all officers.	24 years and under.	25 to 29 years.	30 to 34 years.	35 to 39 years.	40 to 44 years.	45 to 49 years.	50 to 54 years.	55 to 59 years.	60 years and over.
CAUSES OF RETIREMENT.											
Mental alienation	5	1.11	.....	.....	1	1	2	1	.....	.....	.....
Pulmonary tuberculosis	4	.89	.....	1	1	1	1	.....	.....	.....	.....
Organic heart disease	4	.89	.....	.....	.....	1	1	2	.....	.....	.....
Brights disease	4	.89	.....	.....	.....	1	.....	1	.....	1	1
Deafness	3	.66	.....	.....	.....	1	.....	.....	1	1	.....
Chronic neurasthenia, cerebral	2	.44	.....	.....	.....	.....	.....	.....	2	.....	.....
Chronic dysentery	1	.22	.....	.....	.....	.....	.....	.....	1	.....	.....
Partial paralysis, specific	1	.22	.....	1	.....	.....	.....	.....	.....	.....	.....
Anemia	1	.22	.....	.....	1	.....	.....	.....	.....	.....	.....
Bronchial asthma	1	.22	.....	.....	.....	.....	.....	1	.....	.....	.....
Chronic intestinal catarrh	1	.22	.....	.....	.....	.....	.....	.....	.....	.....	1
Hernia, inguinal (result of operation)	1	.22	.....	.....	.....	.....	.....	.....	.....	.....	1

TABLE No. 1.—*Retirement of officers, United States Army, year 1911, for disability, by causes and rank, grouped by ages*—Continued.

	Total.		Ages of officers, quinquennial groups.								
	Number.	Ratio per 1,000 of all officers.	24 years and under.	25 to 29 years.	30 to 34 years.	35 to 39 years.	40 to 44 years.	45 to 49 years.	50 to 54 years.	55 to 59 years.	60 years and over.
CAUSES OF RETIREMENT—CON.											
Paralysis sphincter ani (result of operation)	1	0.22	.....	.....	.....	1	.....	.....	.....	.....	.....
Loss of leg, railroad accident	1	.22	.....	.....	.....	1	.....	.....	.....	.....	.....
RANK IN SERVICE.											
Colonel	3	.66	.....	.....	.....	.....	.....	.....	.....	1	2
Lieutenant colonel	2	.44	.....	.....	.....	.....	.....	1	.....	1	.....
Major	5	1.11	.....	.....	.....	1	1	1	1	.....	1
Captain	7	1.55	.....	.....	.....	2	.....	2	3	.....	.....
First lieutenant	9	1.99	.....	.....	2	3	3	1	.....	.....	.....
Second lieutenant	4	.89	.....	2	1	1	.....	.....	.....	.....	.....
Number of retirements	30	6.64	.....	2	3	7	4	5	4	2	3
Number of officers in service	4,515	.....	259	909	961	1,025	584	346	220	136	75
Ratio per 1,000 of each group	.....	.....	.....	2.20	3.12	6.83	6.85	14.45	18.18	14.71	40.00

The following table shows the causes of deaths of officers:

TABLE No. 2.—*Deaths of officers, United States Army, year 1911, by causes and rank, grouped by ages.*

	Total.		Ages of officers, quinquennial groups.								
	Number.	Ratio per 1,000 of all officers.	24 years and under.	25 to 29 years.	30 to 34 years.	35 to 39 years.	40 to 44 years.	45 to 49 years.	50 to 54 years.	55 to 59 years.	60 years and over.
CAUSES OF DEATH.											
Chronic nephritis (interstitial, 4; parenchymatous, 1)	5	1.11	.....	1	.....	.....	.....	2	.....	1	1
Fracture of skull (fall from horse, 1; aeroplane accident, 1)	2	.44	.....	.....	1	.....	.....	.....	.....	1	.....
Gunshot wounds, suicidal	2	.44	.....	1	.....	1	.....	.....	.....	.....	.....
Malarial fever, aestivo autumnal	1	.22	.....	.....	.....	1	.....	.....	.....	.....	.....
General miliary tuberculosis	1	.22	.....	.....	.....	.....	1	.....	.....	.....	.....
Apoplexy	1	.22	.....	.....	.....	.....	.....	.....	.....	.....	1
Cardiac dilatation	1	.22	.....	.....	.....	.....	.....	.....	.....	1	.....
Pneumonia	1	.22	.....	.....	.....	1	.....	.....	.....	.....	.....
Appendicitis	1	.22	.....	.....	.....	.....	.....	1	.....	.....	.....
Acute nephritis	1	.22	.....	.....	.....	.....	.....	1	.....	.....	.....
Incised wounds (killed by Moro running amuck)	1	.22	.....	.....	1	.....	.....	.....	.....	.....	.....
General freezing (caught in blizzard, away from post)	1	.22	.....	.....	1	.....	.....	.....	.....	.....	.....
Acute chloral hydrate poisoning (accidental overdose)	1	.22	.....	.....	1	.....	.....	.....	.....	.....	.....
Acute ptomaine poisoning	1	.22	.....	.....	.....	1	.....	.....	.....	.....	.....
RANK IN SERVICE.											
Colonel	2	.44	.....	.....	.....	.....	.....	.....	.....	.....	2
Lieutenant colonel	3	.66	.....	.....	.....	.....	.....	.....	.....	3	.....
Major	1	.22	.....	.....	.....	.....	.....	1	.....	.....	.....
Captain	7	1.55	.....	.....	1	3	1	2	.....	.....	.....
First lieutenant	5	1.11	.....	1	2	1	.....	1	.....	.....	.....
Second lieutenant	2	.44	.....	1	1	.....	.....	.....	.....	.....	.....
Number of deaths	20	4.43	.....	2	4	4	1	4	.....	3	2
Number of officers in service	4,515	.....	259	909	961	1,025	584	346	220	136	75
Death rate per 1,000 of each group	.....	.....	.....	2.20	4.16	3.90	1.71	11.56	.....	22.06	26.67

TEST EXERCISES FOR FIELD OFFICERS.

Of the 772 officers of field rank, who were subject to the annual physical test, 27 were excused in 1911; in 7 the disability was regarded as permanent; in 2 as probably permanent; in 13 as only temporary; and 5 were excused for other reasons.

TABLE NO. 3.—*Field officers excused from physical test, year 1911.*

	Rank.			Total number excused.	Excused on account of disability.			Excused for other reasons.
	Colonel.	Lieutenant colonel.	Major.		Permanent.	Probably permanent.	Temporary.	
Infantry	1		2	3	2		1	
Cavalry			1	1			1	
Coast Artillery	1			1	1			
Engineers	3	1		4	1		2	1
Medical Department	5		4	9	1	2	4	2
Subsistence Department	1		1	2			1	1
Ordnance Department	1	1		2			1	1
Pay Department			1	1			1	
Others		2	2	4	2		2	
Total	12	4	11	27	7	2	13	5

ENLISTED MEN.

The mean enlisted strength of the Army, American troops, white and colored, for the year 1911, as reported on the monthly sick reports of the Medical Department, was 72,748, and on the returns of The Adjutant General's Office, 73,023. The former represents the strength of the commands from which the sick returns were made, and was used in calculating all ratios except those for deaths and discharges. As all deaths and discharges were reported, even of those absent from a command, the total strength as obtained from The Adjutant General was used in calculating ratios pertaining to those headings. This shows an increase in strength over the year 1910, for which the medical returns showed 71,534 and The Adjutant General's Office, 71,814.

During the year 1911 American troops were stationed in the United States proper, the Philippine Islands, Alaska, Hawaii, and the Canal Zone. Native troops served in Porto Rico and the Philippines.

Statistics for the native troops, Porto Rican and Filipino, have been separately compiled, and when reference is made to the "Army" in this report the American Army proper, white and colored troops, is meant.

As in many diseases, notably the venereal and malarial, the same soldier is often admitted several times on account of the same case of illness, the total number of admissions is necessarily considerably greater than the actual number of cases. The extent of this discrepancy for diseases and injury is 6.02 per cent, as shown in the table following, in which, however, only those diseases are shown where the difference between admissions and cases was 10 or more.

TABLE No. 4.—*Admissions and cases compared, for the United States Army, year 1911.*

	Admissions and cases (men) compared.			
	Admissions.	Cases (men).	Excess of admissions over cases.	Percentage of admissions deducted to show cases.
Typhoid vaccination	1,302	1,201	101	7.76
Malarial fever	1,832	1,627	205	11.19
Tonsillitis	3,625	3,471	154	4.25
Influenza	1,201	1,167	34	2.83
Dysentery	302	271	31	10.26
Dengue	1,453	1,411	42	2.89
Vaccinia	1,580	1,564	16	1.01
Tuberculosis (all)	272	258	14	5.15
Syphilis	3,574	2,919	655	18.33
Chancroids	2,561	2,390	171	6.68
Gonorrhea	7,333	6,585	748	10.20
Acute articular rheumatism	426	390	36	8.45
Rheumatism, articular, chronic	267	249	18	6.74
Alcoholism	1,563	1,372	191	12.22
Epilepsy	126	107	19	15.08
Neuralgia	330	311	19	5.76
Neurasthenia	129	106	23	17.83
Diseases of the eye and its annexa	797	764	33	4.14
Diseases of the ear and its annexa	575	543	32	5.57
Varicocele	273	259	14	5.13
Varicose veins	61	50	11	18.03
Hemorrhoids	488	469	19	3.89
Lymphadenitis, nonvenereal	415	386	29	6.99
Coryza	979	963	16	1.63
Acute bronchitis	2,149	2,093	56	2.61
Asthma	82	53	29	35.37
Diseases of the teeth, gums, and alveoli	587	565	22	3.75
Diseases of the pharynx	825	814	11	1.33
Dyspepsia	1,373	1,302	71	5.17
Gastritis	658	626	32	4.86
Diarrhea, acute	1,265	1,210	55	4.35
Enteritis	905	871	34	3.76
Intestinal parasites	261	245	16	6.13
Hernia	306	280	26	8.50
Constipation	1,280	1,238	42	3.28
Appendicitis	453	424	29	6.40
Furuncle	1,624	1,436	188	11.58
Acute abscess, phlegmon	954	907	47	4.93
Corns and warts	234	222	12	5.13
Ingrowing nails	376	358	18	4.79
Dermatitis from poisonous plants	271	254	17	6.27
Eczema and pemphigus	146	131	15	10.27
Scabies	291	275	16	5.50
Synovitis	182	156	26	14.29
Muscular rheumatism and myalgia	1,297	1,216	81	6.25
Congenital malformations	209	182	27	12.92
Debility following operation and disease	186	176	10	5.38
Diseases, except as shown in detail	8,597	8,364	233	2.71
Total for diseases	55,975	52,231	3,744	6.69
Total for injuries	12,098	11,743	355	2.93
Grand total	68,073	63,974	4,099	6.02

CONSTANTLY NONEFFECTIVE RATE.

The constantly noneffective rate, which is the true measure of the loss in efficiency of the Army from sickness and injury, was 33.28 per 1,000, as compared with 35.93 for 1910, 41.48 for 1909, 42.68 for 1908, and 46.17 for 1907. This is the lowest noneffective rate in the history of the Army.

TOTAL ADMISSIONS TO SICK REPORT.

The total number of admissions to sick report was 68,073, equal to an admission rate of 935.74 per 1,000, as compared with 949.76 for

the previous year and 1,062.99 for 1909. It is thus less than one admission for each soldier during the year, and is the lowest rate in the history of the Army.

DEATHS FROM ALL CAUSES.

The deaths from all causes numbered 348, of which 194 were from disease. The death rate for all causes was 4.77 for the year 1911 and 2.66 for disease, as compared with 4.46 and 2.44, respectively, for the preceding year. The total death rate and that from disease are both the lowest on record in this office except those for the year 1910.

DISCHARGES FOR DISABILITY.

The discharges for disability numbered 1,011, the rate being 13.85, as compared with 14.02 for 1910, 16.84 for 1909, and 18.48 for 1908.

ADMISSION RATES FOR DISEASE.

The ratio for 1911 was 769.44 per 1,000 of mean strength; for the previous year, 766.06, and for the decade 1,137.84. This is the lowest admission rate for disease for any year in the history of the Army except that for the year 1910.

The Table No. 5 gives the general rates for the Army as far as they can be obtained since the year 1818, when the office of the Surgeon General was first established as a bureau of the War Department.

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ADMISSION RATES FOR EXTERNAL CAUSES.

There were 149 admissions for gunshot wounds, including 5 shot in action. There were 52 deaths from this cause, including 3 killed in action, 3 shot by sentry on guard, 31 suicides, and 8 homicides.

Wounds other than gunshot (contused, lacerated, incised, and punctured) caused 2,586 admissions. Four of these wounds were received in action. From these wounds there were 10 deaths, including one killed in action, and 14 discharges.

Drowning caused 24 (2 suicidal), and poisoning, acute, 9 deaths (5 suicidal). There were 46 suicides, 18 homicides, 16 deaths caused by railroad accidents, 10 by vehicles and horses, and 9 by falling from high places. There were no deaths from freezing or sunstroke.

NONEFFECTIVE RATES FOR DISEASE.

Chart A, giving the total noneffective rates for diseases since 1888 for the Army, shows in a striking way the increase in sickness due to the exposures to tropical climates and conditions consequent upon the occupation of new territory during and since the Spanish-American war. It also shows a steady diminution in sickness after the first year of colonial expansion in 1898, with the rapid advance of our knowledge of tropical diseases and preventive medicine and the establishment of more sanitary conditions of living in our tropical possessions.

The progressive improvement since 1898 has been due chiefly to sanitary control of the infectious diseases—malarial fevers, typhoid, and dysentery. It would be even greater than at present if it had not been offset to a considerable extent by the formidable increase in the venereal diseases and tuberculosis.

DISCHARGES.

All discharges are now made in the United States, except for the Porto Rican regiment and the Filipino Scouts, but the discharges and deaths occurring in the United States of soldiers invalided home from foreign service, and whose organizations were serving abroad at the time, have been credited to the country from which the soldier was invalided. There remains, however, a considerable number of deaths and discharges which can only be assigned to the place where they occur, though the diseases which led to these terminations were contracted abroad.

INFLUENCE OF STATION ON TROOPS.

Regarding the comparative healthfulness of various countries in which the American troops were serving during the year, it will be noted in Table No. 6 that Alaska had, as usual, the lowest admission, discharge and noneffective rates; the United States, continental, the second lowest admission and the highest discharge rate; the Philippines the second lowest discharge rate and the highest admission, and second highest noneffective rate; and Hawaii, the lowest death rate and the highest noneffective rates.

The charts on pages 24 and 25 give a summary of the health of the Army by countries in which it was stationed during the year.

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INFLUENCE OF ARMS OF SERVICE.

In these comparisons the enlisted men of the Ordnance Department and Signal Corps are not considered on account of their small number, and the special character of their service.

The admission rate was highest for the Cavalry and lowest for the Hospital Corps, the death rate was highest in the Engineers and lowest in the Coast Artillery.

The following table shows the relative frequency of the occurrence of the more important diseases for the various arms of the service, the figure 1 indicating the highest ratio and 6 the lowest in each case for each arm:

TABLE No. 7.—*The relative frequency of occurrence of certain important diseases by arms of service, United States Army, year 1911.*

Arms of service.	Most important diseases.											
	Venereal.	Tonsillitis and pharyngitis.	Diarrhea and enteritis.	Malaria.	Bronchitis.	Alcoholism.	Rheumatism, articular.	Dysentery.	Tuberculosis.	Typhoid fever.	Pneumonia.	Injuries.
Cavalry	2	2	1	3	3	4	3	4	6	5	4	1
Field Artillery	1	1	6	2	1	6	5	6	2	.....	6	2
Coast Artillery	5	5	5	4	2	2	6	5	3	4	3	4
Infantry	3	4	4	5	4	3	2	2	4	3	2	5
Engineers	4	3	3	1	6	5	1	1	5	1	1	3
Hospital Corps	6	6	2	6	5	1	4	3	1	2	5	6

INFLUENCE OF RACE.

The tables show that the white troops had the highest noneffective rate and the highest average number of days treatment for each case; the Porto Rican had the highest rate for admissions and for deaths; the colored troops the highest rate for discharge and for total losses. The noneffective rates were white, 33.60; Porto Rican, 29.78; colored, 25.88; Filipino, 19.86. The admission rates were Porto Rican, 1,050; white, 943.85; colored, 747.17; Filipino, 744.78. The discharge rates were colored, 13.99; white, 13.84; Porto Rican, 8.62; Filipino, 4.94. The death rates were Porto Rican, 6.90; colored, 6.66; white, 4.68; Filipino, 4.56. The rates for total losses were colored, 20.65; white, 18.52; Porto Rican, 15.52; Filipino, 9.50. The average number of days' treatment for each case was white, 12.99; colored, 12.64; Porto Rican, 10.35; and Filipino, 9.73.

The admission rate for venereal diseases was for the Porto Ricans 191.38; white, 187.08; colored, 139.91; and Filipino, 58.11 per 1,000. The rate for malarial fevers was for the Filipino 242.12; Porto Rican, 131.03; white, 26.24; and colored, 0.67. Due to the fact that there were no colored troops serving in the Philippines during the year the rate for all tropical diseases, such as malarial fevers, dysenteries, and

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dengue, were higher for the white than for the colored troops. The rate for rheumatism for the colored troops was 12.99, for the white 9.38; and that for organic heart diseases was for the colored 3.33 and for the white 1.80 per 1,000. The rate for alcoholism for the white was 22.05; colored, 8.33; Porto Rican, 1.72; and Filipino, 0.76 per 1,000. For insanity the rate was for the Porto Ricans, 3.45 per 1,000; colored, 2.66; white, 1.69; and Filipino, 0.95. For tuberculosis the rate for the colored troops was 5.33 per 1,000; white, 3.67; Filipino, 3.23; and Porto Rican, 1.72.

COMPARISON WITH FOREIGN ARMIES.

An effort is made in Chart H and Tables Nos. 73 and 74 to make a comparison of the data available in the annexes to the annual reports of the medical departments of the armies of a number of foreign Governments. There are, however, so many factors which are peculiar to each country that an accurate comparison is impossible. For example, in most foreign services many of the minor ailments, which in the United States Army are treated in quarters and recorded with the same accuracy and care as in hospital cases, are not made of record in the medical reports.

Table No. 73 shows that the admission rate for the United States was 887.80 per 1,000, as compared with the French 2,166, Spanish 1,097, Japanese 856.30, Austro-Hungarian 823.2, British 790.78, Prussian 588.9, Bavarian 459.9, and Russian 451.5. The noneffective rate was 31.40 per 1,000 as compared with French 35.85, Spanish 31.83, Japanese 30.97, British 27.28, and Prussian 24.80. The discharge rate was 15 per 1,000 as compared with Bavarian 49.3, Spanish 44.2, Russian 41.7, Prussian 41.1, French 35.34, Japanese 26.94, and English 11.07. The death rate was 4.72 as compared with the Russian 4.07, French 3.75, Spanish 3.71, Japanese 3.57, Austro-

Hungarian 2.84, British 2.42, Bavarian 2.26, and Prussian 1.78. The rate for total losses was 19.72 per 1,000, as compared with Bavarian 51.56, Spanish 47.9, Russian 45.8, Prussian 42.88, French 39.09, Japanese 30.51, and English 13.49.

Table No. 74 shows that the admission rates for alcoholism, syphilis, gonorrhea, and chancroid were all much higher for the United States than for any other country. For typhoid fever the admission rate for our Army was 0.80, as compared with the Japanese 5.47, Russian 5.6, Spanish 3.24, French 2.95, British 2.2, Austro-Hungarian 1.3, Prussian 0.35, and Bavarian 0.21. The death rate for typhoid was 0.11 per 1,000 as compared with the Spanish 0.82, Russian 0.78, Japanese 0.55, French 0.47, British 0.28, Austro-Hungarian 0.20, Bavarian 0.06, and Prussian 0.03. For malarial fever the rates for the United States were lower than for the British, Russian, and Japanese, but higher than for the other countries in the table. The rate for dysentery for our Army was higher than that for any other army except the British. For tuberculosis our rate was lower than that for the Spanish, French, and Japanese, but higher than that for the other countries in the table.

It will be noticed that in these tables the figures for the American troops are for the year 1911, for the British and Austro-Hungarian for the year 1910, and for the others included in the table for 1909.

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SURGICAL OPERATIONS.

On page 210 will be found Table No. 64 of the principal surgical operations performed by medical officers upon officers and enlisted men; operations upon families of officers and of enlisted men, and other civilians who are entitled to treatment at Army posts are not included. In 4,403 operations there were 27 failures and 24 deaths. The anæsthetic used was ether in 1,899 cases, chloroform in 248, chloroform and ether 74, local 1,606, and none was required in 576 cases. Of major surgical operations there were 324 operations for appendicitis, 218 for inguinal hernia, 30 for empyema, 19 for hepatic abscess, 25 for ischio-rectal abscess, and 288 for hemorrhoids. There were 3 deaths following operation for appendicitis, 2 each for empyema and gunshot wound of abdomen, and 1 for each of the following conditions: sarcoma, left upper maxillary region, intestinal obstruction, intra-abdominal abscess, rupture of small intestines, stab wound of abdomen, sarcoma of rectum, rupture of bladder, laceration of bladder, intracerebral hemorrhage, fracture of vertebra, and 4 deaths following amputations for wounds of the lower extremities.

TABLE No. 8.—*Influence of disease in the Army, by length of service, age, and arms of service, for the year 1911.*

LENGTH OF SERVICE.

	Mean strength.	Admitted.	Discharged on certificate of disability.	Died.	Constantly noneffective.	Ratio per 1,000 of mean strength. Admitted.	Discharged on certificate of disability	Died.	Constantly noneffective.
Under 1 year	13,659	21,270	400	64	707.75	1,557.22	29.18	4.67	51.82
1 to 2 years	8,547	5,621	105	10	211.77	657.66	12.24	1.17	24.78
2 to 3 years	15,338	9,740	113	16	365.10	635.02	7.34	1.04	23.80
3 to 4 years	7,495	5,186	57	10	196.83	691.93	7.57	1.33	26.26
4 to 5 years	4,496	2,288	35	6	90.92	508.90	7.76	1.33	20.23
5 to 10 years	11,768	6,748	113	32	275.07	573.42	9.57	2.71	23.37
10 years and over	11,445	5,122	74	56	206.14	447.53	6.44	4.88	18.01
Total	72,748	55,975	897	194	2,053.58	769.44	12.28	2.66	28.23

AGE.

19 years and under	2,620	3,711	54	15	119.14	1,416.41	20.53	5.70	45.47
20 to 24 years	28,043	27,929	408	55	967.38	995.93	14.49	1.95	34.50
25 to 29 years	20,204	13,750	212	36	530.60	680.56	10.45	1.78	26.26
30 to 34 years	11,149	5,777	132	39	239.32	518.16	11.80	3.48	21.47
35 to 39 years	5,727	2,599	56	24	107.05	453.82	9.74	4.18	18.69
40 to 44 years	3,052	1,331	17	15	53.03	436.11	5.55	4.90	17.38
45 to 49 years	1,431	588	9	6	24.76	410.90	6.27	4.18	17.30
50 years and over	522	290	9	4	12.30	555.56	17.18	7.63	23.57
Total	72,748	55,975	897	194	2,053.58	769.44	12.28	2.66	28.23

ARMS OF SERVICE.

Infantry	23,493	16,269	283	61	650.93	692.55	12.01	2.59	27.71
Cavalry	11,969	10,212	109	23	373.16	853.20	9.08	1.92	31.18
Field artillery	4,744	4,060	64	6	162.56	855.82	13.44	1.26	34.27
Coast Artillery	17,289	11,735	200	33	420.60	678.75	11.52	1.90	24.33
Ordnance	716	411	5	4	12.86	574.03	6.95	5.56	17.96
Engineers	1,812	1,475	16	8	59.94	814.02	8.80	4.40	33.07
Signal Corps	1,189	733	13	3	30.79	616.48	10.90	2.51	25.90
Hospital Corps	3,435	2,069	52	11	86.82	602.33	15.08	3.19	25.27
All others	8,101	9,011	155	45	255.92	1,112.33	19.04	5.53	31.59
Total	72,748	55,975	897	194	2,053.58	769.44	12.28	2.66	28.23

The preceding table shows that those having less than one year of service had the highest noneffective admission and discharge rates. These rates are also highest for those 19 years or under. The highest death rates were for those 50 years and over, and for those having 10 years and over of service. The highest noneffective and admission rates were in the Field Artillery, the highest death rate in the Ordnance, and the highest discharge rate in the Hospital Corps.

RECRUITING.

The movement of recruits is shown in Table No. 9. Each recruit before enlistment was given a thorough examination by a medical officer of the Army. There were 50,534 examined as compared with 25,133 for the preceding year. Of each 1,000 examined 90.55 were rejected and 16.33 declined enlistment, as compared with 94.62 and 16.19 for 1910. Of each 1,000 examined by medical officers, 893.12 were accepted, as compared with 889.19 for 1910. Of the number

examined and enlisted, 408.52 per 1,000 were reenlistments and 484.60 were original enlistments, as compared with 492.54 and 396.65 for 1910.

TABLE No. 9.—*Movement of recruits, white and colored, 1911.*

	White.		Colored.		Total.	
	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.
Examined by medical officers	47,980	1,000.00	2,554	1,000.00	50,534	1,000.00
Accepted by medical officers	42,786	891.75	2,347	918.95	45,133	893.12
For first enlistment	23,460	488.95	1,029	402.90	24,489	484.60
For all other enlistments	19,326	402.79	1,318	516.05	20,644	408.52
Rejected by medical officers	[1] 4,382	91.33	[1] 194	75.96	[1] 4,576	90.55
Declined to enlist	812	16.92	13	5.09	825	16.33

[1] Of this number 715 (686 white and 29 colored) were rejected for causes not physical.

This table shows only the applicants who had previously passed the scrutiny of the recruiting officers and who were therefore picked men. The number of examinations and of rejections by recruiting officers is not known to this office, but was, of course, much larger. The present recruiting system operates in a highly satisfactory manner and furnishes to the Army recruits of far better quality than when they were examined under the former system of civilian physicians at the places of enlistment.

Table No. 10 shows the nativity of accepted recruits for the year.

TABLE No. 10.—*Nativities of accepted recruits, American Army, 1911.*

Country of birth.	Accepted recruits, year 1911.		Country of birth.	Accepted recruits, year 1911.	
	Number.	Ratio per 1,000 of total accepted.		Number.	Ratio per 1,000 of total accepted.
United States:			Canada	296	6.56
White	36,556	809.96	Italy	227	5.03
Colored	2,347	52.00	Denmark	149	3.30
Total native born	38,903	861.96	Scotland	98	2.17
			Holland	90	1.99
Germany	1,139	25.24	Switzerland	80	1.77
Ireland	1,022	22.64	France	40	.89
Russia	925	20.49	Others	221	4.90
Austria	709	15.71	Total foreign born	6,230	138.04
England	476	10.55			
Scandinavia	379	8.40	Grand total	45,133	1,000.00
Hungary	379	8.40			

The number of foreign-born recruits is less than last year, being 138.04 per 1,000 for 1911, as compared with 145.56 for 1910 and 140.46 for 1909. The most marked decrease in the proportion of recruits was from Germany, Ireland, and Canada.

The following tables have been carefully compiled and are of interest, as they show the state of physical development of the men admitted to the Army during the year. The ages of all the recruits accepted, including those reenlisted, white and colored, and the proportion at each age per 1,000 are shown in this statement.

TABLE No. 11.—*Ages of recruits, white and colored, and the proportion at each age per 1,000 accepted.*

Age.	White.		Colored.		Total.	
	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.
18 years and under	2,377	55.56	61	25.96	2,438	54.02
19 years	1,753	40.97	57	24.26	1,810	40.11
20 years	393	9.18	32	13.62	425	9.42
21 years	8,327	194.65	302	128.51	8,629	191.21
22 years	4,192	97.98	183	77.87	4,375	96.94
23 years	2,663	62.24	121	51.49	2,784	61.69
24 years	3,864	85.24	175	74.48	3,939	85.28
25 years	2,609	62.33	131	55.74	2,740	60.72
26 years	1,848	43.20	100	42.55	1,948	43.16
27 years	1,820	42.53	105	44.70	1,925	42.65
28 years	1,457	34.06	76	32.34	1,533	33.97
29 years	1,314	30.70	77	32.77	1,391	30.82
30 years	1,899	44.38	104	44.26	2,003	44.38
31 years	1,282	29.96	113	48.09	1,395	30.91
32 years	901	21.06	59	25.11	960	21.27
33 years	892	20.84	82	34.90	974	21.58
34 years	819	19.14	105	44.68	924	20.47
35 years	639	14.93	55	23.40	694	15.38
36 years	547	12.78	41	17.45	588	13.03
37 years	481	11.24	51	21.70	532	11.79
38 years	424	9.91	31	13.19	455	10.08
39 years	322	7.52	22	9.36	344	7.62
40 years and over	2,021	47.24	134	57.01	2,155	47.75
Total	42,798	1,000.00	2,347	1,000.00	45,145	1,000.00

The proportion of accepted recruits under the age of 24 has noticeably increased in comparison with last year, being due undoubtedly to the much larger proportion of original enlistments. The ages of 21 and 22 this year as last year furnished the largest number for any age in the order named.

The series of tables which follow show separately for each race the height of accepted recruits for the year, and the proportion of each height per 1,000; also, in absolute and proportional numbers, the relation of height to age:

TABLE No. 12.—*Relation of height to age.*

ABSOLUTE NUMBERS—WHITE TROOPS.

Height.	Age.									Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years and over.	
5 feet 1 inch and under	1	1	1	29					7	39
5 feet 2 inches	1	2		1		1		2	29	36
5 feet 3 inches	22	20	11	82	46	19	22	28	146	396
5 feet 4 inches	192	131	73	458	261	175	205	158	668	2,321
5 feet 5 inches	325	240	102	901	445	306	397	289	1,795	4,794
5 feet 6 inches	407	304	140	1,202	643	397	593	398	2,479	6,163
5 feet 7 inches	475	347	156	1,502	728	467	709	453	2,474	7,311
5 feet 8 inches	390	284	146	1,407	720	448	697	453	2,746	7,095
5 feet 9 inches	280	202	105	1,243	548	348	507	342	2,259	5,834
5 feet 10 inches	154	112	79	774	404	260	369	261	1,668	4,081
5 feet 11 inches	75	56	40	453	204	117	168	148	887	2,148
6 feet	42	35	31	290	122	93	129	97	537	1,376
6 feet 1 inch	8	5	9	60	56	21	40	27	170	396
6 feet 2 inches and over	5	5	3	45	19	13	27	16	126	259
Total	2,377	1,753	893	8,327	4,192	2,663	3,864	2,609	14,252	42,798

TABLE No. 12.—*Relation of height to age*—Continued.

PROPORTIONATE NUMBERS—WHITE TROOPS.

Height.	Age.									Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years and over.	
5 feet 1 inch and under	0.42	0.57	1.12	3.48	.....	.....	.....	.....	0.43	0.91
5 feet 2 inches	.42	1.14	.....	.12	.....	0.38	.....	0.75	1.17	.61
5 feet 3 inches	9.26	16.54	12.32	9.96	10.97	7.13	8.73	10.49	8.99	9.72
5 feet 4 inches	80.77	74.73	81.75	54.94	62.26	65.71	58.68	59.20	61.46	62.19
5 feet 5 inches	136.73	136.91	114.22	108.07	106.15	112.65	108.35	107.91	106.91	110.64
5 feet 6 inches	171.22	173.42	156.77	144.66	153.39	149.10	152.84	144.62	152.66	152.43
5 feet 7 inches	199.83	197.95	178.05	180.16	173.66	175.37	163.48	165.98	164.55	172.77
5 feet 8 inches	164.07	162.01	156.77	168.77	171.76	168.23	162.94	169.73	169.10	167.93
5 feet 9 inches	117.80	115.23	117.58	137.10	130.73	130.68	138.37	128.14	132.90	131.66
5 feet 10 inches	64.79	63.90	88.47	92.84	96.37	101.01	99.89	105.28	96.56	93.65
5 feet 11 inches	31.55	31.95	44.79	54.34	47.95	43.94	50.76	54.70	53.39	50.04
6 feet	17.67	19.97	34.72	31.91	29.10	31.17	35.21	36.34	33.07	31.37
6 feet 1 inch	3.37	2.85	10.08	8.28	13.12	7.89	13.37	10.12	11.02	9.86
6 feet 2 inches and over	2.10	2.85	3.36	5.40	4.53	6.76	7.37	6.74	7.76	6.22
Total	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

TABLE No. 13.—*Relation of height to age.*

ABSOLUTE NUMBERS—COLORED TROOPS.

Height.	Age.									Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years.	
5 feet 1 inch and under	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5 feet 2 inches	.....	.....	.....	.....	1	.....	.....	.....	3	4
5 feet 3 inches	3	.....	.....	2	.....	.....	1	.....	14	20
5 feet 4 inches	8	5	5	20	9	9	8	8	69	141
5 feet 5 inches	11	5	4	36	20	18	25	17	144	280
5 feet 6 inches	13	10	7	60	23	17	29	24	198	381
5 feet 7 inches	8	11	7	43	41	25	31	19	240	425
5 feet 8 inches	10	11	7	56	26	19	28	23	225	405
5 feet 9 inches	6	10	2	34	15	17	25	22	154	285
5 feet 10 inches	2	4	3	22	15	7	14	8	128	203
5 feet 11 inches	.....	.....	2	19	6	3	6	6	75	117
6 feet	.....	1	.....	7	4	4	5	3	37	61
6 feet 1 inch	.....	.....	1	2	1	2	3	1	6	16
6 feet 2 inches and over	.....	.....	.....	1	2	.....	.....	.....	6	9
Total	61	57	38	302	163	121	175	131	1,299	2,347

PROPORTIONATE NUMBERS—COLORED TROOPS.

5 feet 1 inch and under	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5 feet 2 inches	.....	.....	.....	.....	6.13	.....	.....	.....	2.31	1.70
5 feet 3 inches	49.18	.....	.....	6.62	.....	.....	5.71	.....	10.78	8.52
5 feet 4 inches	131.15	87.72	131.58	66.23	55.21	74.38	45.71	61.07	53.12	60.08
5 feet 5 inches	180.33	87.72	105.26	119.21	122.70	148.76	142.86	129.77	110.85	119.30
5 feet 6 inches	213.11	175.44	184.21	198.68	141.10	140.50	165.71	183.21	152.42	162.33
5 feet 7 inches	131.15	192.98	184.21	142.38	251.53	206.61	177.14	145.04	184.76	181.08
5 feet 8 inches	163.93	192.98	184.21	185.43	159.51	157.02	160.00	175.57	173.21	172.56
5 feet 9 inches	98.36	175.44	52.63	112.58	92.02	140.50	142.86	167.94	118.55	121.43
5 feet 10 inches	32.79	70.18	78.95	72.85	92.02	57.85	80.00	61.07	98.54	86.49
5 feet 11 inches	.....	.....	52.63	62.91	36.81	24.79	34.29	45.80	57.74	49.85
6 feet	.....	17.54	.....	23.18	24.54	33.06	28.57	22.90	28.48	25.99
6 feet 1 inch	.....	.....	26.32	6.62	6.13	16.53	17.14	7.63	4.62	6.82
6 feet 2 inches and over	.....	.....	.....	3.31	12.27	.....	.....	.....	4.62	3.83
Total	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

It will be noted that 49.07 per cent of the white recruits were 5 feet 8 inches or over and 1.12 per cent were under the minimum height of 5 feet 4 inches, as compared with 49.04 and 0.987 for the previous year.

For colored troops 46.59 were 5 feet 8 inches or over and 1.02 per cent were under the minimum height, as compared with 46.81 and 1.2.

The average height for recruits was 5 feet 7.56 inches.

The following tables show separately for each race the weight of accepted recruits and the proportion of each weight per 1,000; also the relation of weight to age in both absolute and proportional numbers:

TABLE NO. 14.—*Relation of weight to age.*

ABSOLUTE NUMBERS—WHITE TROOPS.

Weights.	Age.									Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years and over.	
119 pounds and under	98	61	23	151	45	27	50	29	267	751
120 to 124 pounds	415	273	99	603	278	162	177	131	670	2,808
125 to 129 pounds	450	317	113	928	479	242	285	216	1,100	4,130
130 to 134 pounds	397	303	172	1,214	564	362	424	311	1,585	5,332
135 to 139 pounds	359	267	139	1,420	581	408	487	353	1,838	5,852
140 to 144 pounds	239	194	109	1,190	599	390	512	374	2,016	5,623
145 to 149 pounds	193	138	78	952	487	317	466	356	1,820	4,807
150 to 154 pounds	92	88	58	711	393	276	426	276	1,652	3,972
155 to 159 pounds	55	55	45	475	333	169	278	210	1,272	2,892
160 to 164 pounds	33	26	25	323	173	124	189	137	1,038	2,068
165 to 169 pounds	14	20	14	183	107	81	141	84	761	1,405
170 to 174 pounds	16	8	10	81	74	45	83	65	609	991
175 to 179 pounds	2	.....	5	50	39	26	52	40	454	668
180 pounds and over	14	3	3	56	40	34	94	87	1,156	1,487
Total	2,377	1,753	893	8,337	4,192	2,663	3,664	2,669	16,238	42,786

PROPORTIONATE NUMBERS—WHITE TROOPS.

119 pounds and under	41.23	34.80	25.76	18.11	10.73	10.14	13.65	10.87	16.44	17.55
120 to 124 pounds	174.59	155.73	110.86	72.33	66.32	60.84	48.31	49.08	41.26	65.63
125 to 129 pounds	189.31	180.83	126.54	111.31	114.27	90.88	77.78	80.93	67.74	96.52
130 to 134 pounds	167.02	172.85	192.62	145.61	134.54	135.94	115.72	116.52	97.61	124.62
135 to 139 pounds	151.02	152.31	155.66	170.32	138.60	153.22	132.91	132.26	113.19	136.77
140 to 144 pounds	100.55	110.66	122.06	142.74	142.89	146.45	139.74	140.13	124.15	131.42
145 to 149 pounds	81.19	78.72	87.35	114.19	116.17	119.04	127.18	133.38	112.08	112.35
150 to 154 pounds	38.70	50.20	64.95	85.28	93.75	103.64	116.27	103.41	101.74	92.83
155 to 159 pounds	23.14	31.38	50.40	56.97	79.44	63.46	75.87	78.68	78.33	67.59
160 to 164 pounds	13.88	14.83	28.00	38.74	41.27	46.56	51.58	51.32	63.92	48.33
165 to 169 pounds	5.89	11.41	15.68	21.95	25.52	30.42	38.48	31.47	46.87	32.84
170 to 174 pounds	6.73	4.56	11.20	9.72	17.65	16.90	22.65	24.36	37.50	23.16
175 to 179 pounds	.84	.....	5.60	6.00	9.30	9.76	14.19	14.99	27.96	15.61
180 pounds and over	5.89	1.71	3.36	6.72	9.54	12.77	25.65	32.60	71.19	34.76
Total	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

TABLE No. 15.—*Relation of weight to age.*

ABSOLUTE NUMBERS—COLORED TROOPS.

Weights.	Age.								Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years and over.	
119 pounds and under	3	2	.....	2	.....	1	1	.....	7	16
120 to 124 pounds	10	5	2	12	3	5	3	3	22	65
125 to 129 pounds	10	6	2	20	13	7	9	9	56	132
130 to 134 pounds	7	12	8	44	24	13	16	16	103	243
135 to 139 pounds	8	9	7	39	23	12	18	15	165	236
140 to 144 pounds	13	8	3	53	26	22	19	19	155	318
145 to 149 pounds	7	4	6	36	23	13	39	21	128	277
150 to 154 pounds	1	6	2	36	14	17	14	18	157	265
155 to 159 pounds	.....	2	1	23	10	9	20	10	139	214
160 to 164 pounds	1	1	4	9	12	11	12	7	122	179
165 to 169 pounds	1	.....	.....	12	8	2	10	7	90	130
170 to 174 pounds	.....	.....	1	9	1	1	9	5	64	90
175 to 179 pounds	.....	.....	2	4	2	3	2	.....	47	60
180 pounds and over	.....	2	.....	3	4	5	3	1	104	122
Total	61	57	38	302	163	121	175	131	1,299	2,347

PROPORTIONATE NUMBERS—COLORED TROOPS.

119 pounds and under	49.18	35.09	.....	6.62	.....	8.26	5.71	.....	5.39	6.82
120 to 124 pounds	163.93	87.72	52.63	39.74	18.40	41.32	17.14	22.90	16.94	27.69
125 to 129 pounds	163.93	105.26	52.63	66.23	79.75	57.85	51.43	68.70	43.11	56.24
130 to 134 pounds	114.75	210.52	210.53	145.70	147.24	107.43	91.43	122.14	79.29	103.54
135 to 139 pounds	131.15	157.89	184.21	129.14	141.10	99.17	102.86	114.50	80.83	100.55
140 to 144 pounds	213.11	140.35	78.95	175.50	159.51	181.82	108.57	145.04	119.32	135.49
145 to 149 pounds	114.75	70.18	157.89	119.21	141.10	107.43	222.86	160.31	98.54	118.02
150 to 154 pounds	16.39	105.26	52.63	119.21	85.89	140.50	80.00	137.40	120.86	112.91
155 to 159 pounds	.....	35.09	26.32	76.16	61.35	74.38	114.29	76.34	107.01	91.18
160 to 164 pounds	16.39	17.54	105.26	29.80	73.62	90.91	68.57	53.44	93.92	76.27
165 to 169 pounds	16.39	.....	.....	39.74	49.08	16.53	57.14	53.44	69.28	55.39
170 to 174 pounds	.....	.....	26.32	29.80	6.13	8.26	51.43	38.17	49.27	38.35
175 to 179 pounds	.....	.....	52.63	13.25	12.27	24.79	11.43	.....	36.18	25.56
180 pounds and over	.....	35.08	.....	9.93	24.54	41.32	17.14	7.63	80.06	51.98
Total	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

The average weight of recruits was 145.31 pounds; of the white troops 55.89 per cent weighed 140 pounds or over, and 1.8 per cent weighed less than the minimum, 120 pounds, as compared with 58.07 and 1.61 for 1910. Of the colored troops, 70.48 per cent weighed 140 pounds or over, while 0.68 per cent weighed less than the minimum, 120 pounds, compared with 73.6 and 0.48 for 1910.

The next tables show separately for each race the chest measurement of accepted recruits, and the proportion of each measurement per 1,000; also the chest measurement in relation to age in both absolute and proportional numbers.

TABLE No. 16.—*Relation of chest measurement to age.*

ABSOLUTE NUMBERS—WHITE TROOPS.

Chest measurement.	Age.									Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years and over.	
30 inches and under.	137	84	28	182	81	36	56	28	198	830
31 inches	393	294	120	734	275	135	204	134	776	3,065
32 inches	822	549	234	2,059	871	504	598	436	2,107	8,180
33 inches	548	428	219	2,157	1,018	655	826	641	3,055	9,547
34 inches	302	243	173	1,690	940	601	827	588	3,257	8,621
35 inches	102	108	72	918	567	390	595	401	2,642	5,795
36 inches	52	37	32	412	287	216	332	254	1,869	3,491
37 inches	16	10	11	133	96	81	130	110	1,080	1,667
38 inches	2	.....	2	35	41	29	66	44	619	838
39 inches and over	3	.....	2	17	16	16	30	33	635	752
Total	2,377	1,753	893	8,337	4,192	2,663	3,664	2,669	16,238	42,786

PROPORTIONATE NUMBERS—WHITE TROOPS.

30 inches and under.	57.64	47.92	31.36	21.83	19.32	13.52	15.28	10.49	12.19	19.40
31 inches	165.33	167.72	134.38	88.04	65.60	50.70	55.68	50.21	47.79	71.64
32 inches	345.81	313.18	262.04	246.97	207.76	189.26	163.20	163.36	129.76	191.18
33 inches	230.54	244.15	245.24	258.73	242.84	245.96	225.43	240.16	188.14	223.13
34 inches	127.05	138.62	193.73	202.71	224.24	225.69	225.71	220.31	200.58	201.49
35 inches	42.91	61.61	80.63	110.10	135.26	146.46	162.39	150.24	162.70	135.44
36 inches	21.88	21.11	35.84	49.42	68.46	81.12	90.61	95.17	115.10	81.59
37 inches	6.73	5.70	12.32	15.95	22.90	30.42	35.48	41.22	66.51	38.96
38 inches	.84	.....	2.24	4.20	9.78	10.89	18.01	16.49	38.12	19.59
39 inches and over	1.26	.....	2.24	2.04	3.82	6.01	8.19	12.36	39.11	17.58
Total	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

TABLE No. 17.—*Relation of chest measurement to age.*

ABSOLUTE NUMBERS—COLORED TROOPS.

Chest measurement.	Age.									Total.
	18 years and under.	19 years.	20 years.	21 years.	22 years.	23 years.	24 years.	25 years.	26 years and over.	
30 inches and under.	5	3	.....	10	2	2	3	2	17	44
31 inches	16	9	3	26	14	10	11	8	60	157
32 inches	20	17	10	62	36	28	34	24	168	399
33 inches	17	14	10	84	42	18	50	35	252	522
34 inches	3	8	7	62	31	23	35	23	272	464
35 inches	.....	4	5	33	20	25	19	27	210	343
36 inches	.....	1	1	18	12	9	14	9	159	223
37 inches	.....	1	2	4	3	4	6	1	80	101
38 inches	.....	.....	.....	1	2	2	2	2	47	56
39 inches and over	.....	.....	.....	2	1	.....	1	.....	34	38
Total	61	57	38	302	163	121	175	131	1,299	2,347

PROPORTIONATE NUMBERS—COLORED TROOPS.

30 inches and under.	81.97	52.63	.....	33.11	12.27	16.53	17.14	15.27	13.09	18.75
31 inches	262.30	157.89	78.95	86.09	85.89	82.64	62.86	61.07	46.19	66.89
32 inches	327.87	298.25	263.16	205.30	220.86	231.40	194.29	183.21	129.33	170.01
33 inches	278.69	245.61	263.16	278.15	257.67	148.76	285.71	267.18	194.00	222.41
34 inches	49.18	140.35	184.21	205.30	190.18	190.08	200.00	175.57	209.39	197.70
35 inches	.....	70.18	131.58	109.27	122.70	206.61	108.57	206.11	161.66	146.14
36 inches	.....	17.54	26.32	59.60	73.62	74.38	80.00	68.70	122.40	95.01
37 inches	.....	17.54	52.63	13.25	18.40	33.06	34.29	7.63	61.59	43.04
38 inches	.....	.....	.....	3.31	12.27	16.53	11.43	15.27	36.18	23.86
39 inches and over	.....	.....	.....	6.62	6.13	.....	5.71	.....	26.17	16.19
Total	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

The chest measurement of 49.47 per cent of the white recruits was 34 inches and over and 1.94 per cent were 30 inches and under, as compared with 47.15 and 2.87 per cent, respectively, for the preceding year. The chest measurements for colored recruits show 52.19 per cent 34 inches or over and 1.88 per cent 30 inches and under, as compared with 52.63 and 1.67 for 1910.

The following table shows the causes of rejection among white and colored troops examined for enlistment during the year 1911, with the ratios per 1,000 rejected:

TABLE No. 18.—*Causes of rejection by medical officers of the Army of candidates examined for enlistment, year 1911.*

Causes of rejection.	Total.		White.						Colored.	
			Native born.		Foreign born.		Total.			
	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.
Venereal diseases	511	111.67	418	110.47	50	83.61	468	106.80	43	221.65
Heart disease	448	97.90	379	100.16	42	70.23	421	96.08	27	139.18
Diseases of the ear, including defects of hearing	392	85.66	335	88.53	51	85.28	386	88.09	6	30.93
Diseases of the eye, including defects of vision	343	74.96	288	76.11	44	73.58	332	75.76	11	56.70
Flat feet	252	55.07	205	54.18	39	65.22	244	55.68	8	41.24
Underweight	160	34.97	141	37.26	13	21.74	154	35.15	6	30.93
Defects of development, except as shown in detail	140	30.60	123	32.51	17	28.43	140	31.95	.....	.....
Alcoholism	139	30.38	124	32.77	13	21.74	137	31.27	2	10.31
Diseases of the respiratory system	123	26.88	110	29.07	10	16.72	120	27.39	3	15.46
Tuberculosis	118	25.79	109	28.81	6	10.03	115	26.25	3	15.46
Hernia	114	24.91	100	26.43	8	13.38	108	24.65	6	30.93
Defective teeth	103	22.51	79	20.88	13	21.74	92	20.99	11	56.70
Diseases of the genito-urinary system, nonvenereal	103	22.51	91	24.05	6	10.03	97	22.14	6	30.93
Chest development, insufficient	99	21.64	88	23.26	7	11.71	95	21.68	4	20.62
Diseases of the skin	90	19.67	79	20.88	8	13.38	87	19.86	3	15.46
Diseases of the organs of locomotion, except spinal curvature	84	18.36	75	19.82	8	13.38	83	18.94	1	5.15
Diseases of the nervous system, except as shown in detail	82	17.92	72	19.03	7	11.71	79	18.03	3	15.46
General diseases	70	15.30	64	16.91	5	8.36	69	15.75	1	5.15
Weakness of mind	64	13.99	49	12.95	11	18.39	60	13.69	4	20.62
Curvature of the spine	54	11.80	44	11.63	4	6.69	48	10.95	6	30.93
Varicose veins	53	11.58	40	10.57	10	16.72	50	11.41	3	15.46
Hemorrhoids	36	7.87	30	7.93	5	8.36	35	7.99	1	5.15
Diseases of the digestive system, except as shown in detail	29	6.34	24	6.34	3	5.02	27	6.16	2	10.31
Varicocele	27	5.90	26	6.87	.....	.....	26	5.93	1	5.15
Overweight and obesity	19	4.15	17	4.49	2	3.34	19	4.34	.....	.....
Underheight	13	2.84	11	2.91	2	3.34	13	2.97	.....	.....
Diseases of the circulatory system, except as shown in detail	9	1.97	7	1.85	2	3.34	9	2.05	.....	.....
Physical debility	5	1.09	5	1.32	.....	.....	5	1.14	.....	.....
Overheight	2	.44	2	.53	.....	.....	2	.46	.....	.....
Injuries	179	39.12	157	41.49	18	30.10	175	39.94	4	20.62
Rejected for causes physical and mental	3,861	843.75	3,292	869.98	404	675.59	3,696	843.45	165	850.52
Rejected for causes not physical or mental	715	156.25	492	130.02	194	324.41	686	156.55	29	149.48
Total rejected	4,576	1,000.00	3,784	1,000.00	598	1,000.00	4,382	1,000.00	194	1,000.00

Venereal diseases caused the largest proportion of rejection, being 111.67 per 1,000, as compared with 113.96 for 1910. Heart diseases were second, with diseases of the ear, eye, and flat feet, in the order given. Venereal diseases, though first, were lower in 1911 than in 1910. In the colored race the ratio for venereal diseases was considerably greater than for same cause or any cause in the white race. It was, however, lower than for the previous year, being 221.65, as as compared with 228.92.

Table No. 19 shows the principal occupations of 24,489 recruits enlisted during the year:

TABLE No. 19.—*Principal occupations of recruits, first enlistment, year 1911*

Occupation.	Number in each case.			Occupation.	Number in each case		
	Total.	White.	Colored.		Total.	White.	Colored
Laborers	8,565	8,011	554	Mill workers	75	75	.....
Farmers	3,334	3,287	47	Teachers	72	71	1
Drivers and stablemen	1,315	1,262	53	Linemen	50	50	.....
Clerks	1,250	1,245	5	Nurses	49	49	.....
Machinists	620	614	6	Glass workers	43	42	1
Carpenters	537	535	2	Conductors	42	42	.....
Miners	536	526	10	Druggists	41	41	.....
Firemen	516	507	9	Lumbermen	41	41	.....
Cooks	490	415	75	Hatters	36	36	.....
Painters	484	475	9	Paper workers	36	36	.....
Railroad hands	350	344	6	Stenographers	36	36	.....
Electricians	328	328	.....	Motormen	35	35	.....
Plumbers	303	301	2	Jewelers	29	29	.....
Barbers	273	259	14	Plasterers	29	29	.....
Musicians	244	235	9	Leather workers	24	24	.....
Metal workers	232	227	5	Civil engineers	23	23	.....
Printers	216	216	.....	Gardeners	23	23	.....
Salesmen	212	211	1	Merchants	21	21	.....
Tailors	213	204	9	Draftsmen	17	17	.....
Bakers	209	203	6	Upholsterers	17	17	.....
Blacksmiths	189	183	6	Florists	16	15	1
Waiters	188	144	44	Cigar makers	16	16	.....
Butchers	183	183	.....	Bartenders	14	14	.....
Engineers	159	159	.....	Laundrymen	14	14	.....
Shoemakers	144	144	.....	Lawyers	13	13	.....
Porters	136	48	88	Cranemen	13	13	.....
Sailors	134	134	.....	Coopers	10	10	.....
Telegraphers	131	130	1	Undertakers	10	10	.....
Molders	131	124	7	Cement workers	9	9	.....
Chauffeurs	131	121	10	Chemists	8	8	.....
Mechanics	122	119	3	Dyers	8	8	.....
Bookkeepers	113	112	1	Actors	6	6	.....
Brick and stone masons	113	110	3	Dentists	5	5	.....
Weavers	110	110	.....	Rubber workers	5	5	.....
Boiler makers	107	107	.....	Miscellaneous	1,113	1,076	37
Students	93	89	4	Total	24,489	23,460	1,029
Tinners	79	79	.....				

DISCHARGES FOR DISABILITY FOR THE ARMY.

Soldiers stationed outside the territorial limits of the United States are now brought to San Francisco for discharge, except those belonging to the Porto Rican regiment and the Philippine Scouts. They are, however, credited in the tabulated reports to the country in which the soldiers were serving when they became disabled if their commands were there at date of discharge.

The number of discharges for disability continues to decrease, being for the Army, for all causes, 13.85 per 1,000 for the year 1911, as compared with 14.02 for 1910. This decrease has continued since 1906, when the discharge rate was 26 per 1,000 (see Chart I). The present

system requires that all soldiers certified by medical officers to be permanently incapacitated for the military service shall be examined and observed by a board of three medical officers at a recruit depot or general hospital before being discharged. The reports of these boards are sent to the War Department and discharges for disability are now made only by authority of the Secretary of War. Of the soldiers so certified for discharge during 1911, 39 were returned to duty by these boards.

UNITED STATES (CONTINENTAL) EXCLUSIVE OF ALASKA.

The average mean strength of the troops serving in the United States was 55,240 (S. G. O.), of which 52,307 were white and 2,933 colored. The noneffective rate, the true measure of the effect of sickness on the military efficiency, for this year shows a decided improvement over last year. The rate was 31.40 per 1,000 for 1911 as compared with 33.95. That for disease was 26.41, and for injury 4.99 in 1911 as compared with 28.44, and 5.51 for 1910. The number constantly sick from disease and external causes in 1911 was 1,734.42, and in 1910 was 1,890.51. In other words, in 1911 there were 166.09 more men constantly fit for duty than in 1910. The noneffective rate for 1909, 1908, 1907, and 1906 was, respectively, 39.70, 41.19, 45.22, and 46.92.

The total admission rate for the year also shows an improvement, being 887.80 per 1,000 as compared with 899.25 for 1910, 1,024.37 for 1909, 1,148.59 for 1908, 1,172.04 for 1907, and 1,179.93 for 1906. The admission rate for disease was, however, slightly higher, while that for external causes lower in 1911 than in 1910, being 725.83 and 161.97 as compared with 715.54 and 183.71, respectively. The discharge rate for 1911 was 15 as compared with 15.28 for 1910, 18.87 for 1909, 21.35 for 1908, 25.36 for 1907, and 32.29 for 1906.

The death rate was 4.72 as compared with 4.42 for 1910, 4.84 for 1909, 5.35 for 1908, 5.63 for 1907, and 5.28 for 1906. The total number of deaths in 1911 was 262; of this number 157 were due to disease and 105 to external causes. Deaths, as well as discharges, which occurred in the United States among those who have been invalided home from their commands in foreign service, have been charged to the country where such commands are stationed.

The white troops had higher rates than the colored for noneffective admissions and discharges, being 31.68, 895.02, and 15.04 as compared with 26.38, 758.95, and 14.32 per 1,000. The death rate for colored troops was, however, higher, being 6.82 as compared with 4.60. These comparisons were also true for 1910.

The highest noneffective rate for disease was that for venereal disease, being 8.82. In 1910 it was 10.14. The second highest was tuberculosis (all kinds), 1.63. This rate was 1.87 in 1910. The highest admission rate was also for venereal diseases, being 163.85; the second highest for bronchitis 34.40. The rate in 1910 for venereal disease was 155.51. The highest discharge rate was for tuberculosis; the highest death rate for disease was also for tuberculosis.

DISCHARGES FOR DISABILITY, UNITED STATES.

The disability discharge rate for the United States for 1911 was 15 per 1,000 as compared with 15.28 for 1910, 18.87 for 1909, 21.35 for 1908, and 25.36 for 1907. These figures show a very material reduction. The cause for this improvement during the last few years is believed to have been due to a large extent to General Order 174, War Department, 1909, which requires that soldiers certified by medical officers to be permanently incapacitated for the military service shall be examined and observed by a board of three medical officers at a recruit depot or a general hospital before discharge.

The following table shows the result of the work of the boards at the recruiting depots:

TABLE No. 20.—*Results at recruit depots of examination by Boards, of soldiers recommended for discharge.*

	Recruit depots.					
	Columbus Barracks, Ohio.	Jefferson Barracks, Mo.	Fort Logan, Colo.	Fort McDowell, Cal.	Fort Slocum, N. Y.	Total.
Number received	22	91	73	145	119	450
Number discharged for disability	17	64	67	121	79	348
Incurred "In line of duty"	9	22	28	48	44	151
Incurred "Not in line of duty"	8	42	39	73	35	197
Number in which line of duty was changed from "Yes" to "No"	2	10	2	1	5	20
Number in which line of duty was changed from "No" to "Yes"					1	1
Number returned to duty	1	9	6	6	17	39
Number otherwise disposed of	1	3		7	10	[1] 21
Number remaining at end of year	3	15		11	13	42

[1] Died, 2; deserted, 1; transferred elsewhere, 18.

The principal causes of discharge, with the percentage of discharges, were as follows: (1) Tuberculosis, 21.47; (2) insanity, 10.33; (3) venereal diseases, 9.92; (4) flat feet, 8.02; (5) heart disease, 5.03.

* * * * * * *

TABLE NO. 21.—*Discharges for disability, year 1911, United States, continental (excluding Alaska).*

Causes of discharge.	Number discharged.	Percentage of total discharges for diseases or external causes.	Discharges for disability.				
			In line of duty.	Not in line of duty.		Discharged for disability before assignment.	
				Contracted before enlistment.	Contracted after enlistment.	In line of duty.	Not in line of duty.
General diseases	280	38.04	166	34	56	2	22
Tuberculosis (of the lungs, 143; of other organs, 15)	158	21.47	136	14	.....	1	7
Syphilis (primary, 1; secondary, 10; tertiary, 15; hereditary, 3)	29	3.94	1	7	16	.....	5
Gonorrhea (rheumatism, 32; chronic gonorrhea, 9; of eye, 1; other forms, 2)	44	5.98	.....	4	32	.....	8
Rheumatism, articular, subacute, and chronic	16	2.17	14	1	1	.....	.....
Alcoholism, chronic	10	1.36	.....	3	6	.....	1
Diabetes	6	.82	5	1	.....	.....	.....
Exophthalmic goiter	5	.68	2	3	.....	.....	.....
Dysentery, amœbic	4	.54	3	.....	.....	1	.....
Tumor, malignant	2	.27	2	.....	.....	.....	.....
Drug habit	2	.27	.....	1	1	.....	.....
Typhoid fever, effects of	1	.14	1	.....	.....	.....	.....
Diphtheria, effects of	1	.14	1	.....	.....	.....	.....
Leukemia	1	.14	1	.....	.....	.....	.....
Anaemia, pernicious	1	.14	.....	.....	.....	.....	1
Diseases of the nervous system	146	19.84	56	57	16	.....	17
Insanity	76	10.33	24	33	12	.....	7
Epilepsy	20	2.72	3	10	2	.....	5
Neuritis	7	.95	5	2	.....	.....	.....
Neurasthenia	7	.95	5	2	.....	.....	.....
General paralysis of the insane	6	.82	5	.....	1	.....	.....
Paralysis, local	5	.68	4	.....	.....	.....	1
Spinal cord, diseases of	5	.68	4	1	.....	.....	.....
Sciatica, subacute, and chronic	3	.41	3	.....	.....	.....	.....
Chorea, chronic	1	.14	.....	1	.....	.....	.....
Hyperchondriasis, chronic	1	.14	.....	1	.....	.....	.....
Other diseases of the nervous system (hysteria, 9; psychopathic constitution, 2; night fear, 1; masturbation, 1; musicians' palsy, 1; unstable nervous system, 1)	15	2.04	3	7	1	.....	4
Congenital malformation and arrested development	94	12.77	.....	73	.....	.....	21
Flat feet	59	8.02	.....	50	.....	.....	9
Defective mentality	28	3.80	.....	16	.....	.....	12
Defective physique	3	.41	.....	3	.....	.....	.....
Malformation of leg	3	.41	.....	3	.....	.....	.....
Malformation of foot	1	.14	.....	1	.....	.....	.....
Diseases of the circulatory system	51	6.93	25	10	1	5	10
Organic heart disease	37	5.03	17	6	.....	5	9
Functional disease of heart	5	.68	2	3	.....	.....	.....
Aneurism	3	.41	3	.....	.....	.....	.....
Varicose veins	2	.27	.....	1	1	.....	.....
Pericarditis, chronic adhesive	1	.14	1	.....	.....	.....	.....
Arteriosclerosis	1	.14	1	.....	.....	.....	.....
Varicocele	1	.14	.....	.....	.....	.....	1
Phlebitis	1	.14	1	.....	.....	.....	.....
Diseases of the digestive system	46	6.25	24	6	2	.....	14
Hernia (inguinal, 20; ventral, 1)	21	2.85	4	3	2	.....	12
Hepatic abscess	6	.82	6	.....	.....	.....	.....
Appendicitis	5	.68	3	1	.....	.....	1
Gastritis, chronic	4	.54	3	1	.....	.....	.....
Gastric ulcer, chronic	2	.27	2	.....	.....	.....	.....
Cholecystitis	1	.14	.....	1	.....	.....	.....
Pyorrhea, alveolaris	1	.14	1	.....	.....	.....	.....
Diarrhea, chronic	1	.14	1	.....	.....	.....	.....
Other diseases of the intestines (duodenal ulcer, 1; prolapsus of rectum, 1; intestinal paresis, 1)	3	.41	2	.....	.....	.....	1
Other diseases of the digestive system (subphrenic abscess, 1; tumor of the pancreas, 1)	2	.27	2	.....	.....	.....	.....
Diseases of the organs of special sense	34	4.62	14	11	1	1	7
Otitis media, chronic catarrhal	16	2.17	7	6	.....	1	2
Hyperopic astigmatism	4	.54	.....	2	.....	.....	2
Trachoma	3	.41	.....	1	.....	.....	2
Deafness	3	.41	2	1	.....	.....	.....

TABLE No. 21.—*Discharges for disability, year 1911, United States, continental (excluding Alaska)*—Continued.

Causes of discharge.	Number discharged.	Percentage of total discharges for diseases or external causes.	Discharges for disability.				
			In line of duty.	Not in line of duty.		Discharged for disability before assignment.	
				Contracted before enlistment.	Contracted after enlistment.	In line of duty.	Not in line of duty.
Diseases of the organs of special sense—Continued.							
Conjunctivitis, chronic follicular	1	0.14	.....	.....	1	.....	.....
Sclerotitis, chronic	1	.14	1	.....	.....	.....	.....
Retino-choroiditis	1	.14	1	.....	.....	.....	.....
Optic neuritis	1	.14	1	.....	.....	.....	.....
Other diseases of the eye (exophorio, 1; hemorrhage into vitreous, 1; strabismus, 1; atrophy of optic nerve, 1)	4	.54	2	1	.....	.....	1
Diseases of the genito-urinary system	33	4.48	6	17	.....	.....	10
Enuresis, nocturnal, chronic	22	2.99	.....	13	.....	.....	9
Chronic Bright's disease	6	.82	4	2	.....	.....	.....
Cystitis, chronic	2	.27	1	1	.....	.....	.....
Nephritis, acute	1	.14	1	.....	.....	.....	.....
Renal calculi	1	.14	.....	.....	.....	.....	1
Vesical calculi	1	.14	.....	1	.....	.....	.....
Diseases of the organs of locomotion	26	3.53	14	8	1	.....	3
Synovitis, chronic	5	.68	3	1	.....	.....	1
Curvature of spine	3	.41	.....	2	.....	.....	1
Muscular rheumatism and myalgia	3	.41	3	.....	.....	.....	.....
Arthritis	2	.27	2	.....	.....	.....	.....
Periostitis	2	.27	1	.....	1	.....	.....
Osteomyelitis, chronic	1	.14	1	.....	.....	.....	.....
Necrosis, ankle	1	.14	1	.....	.....	.....	.....
Exostosis, humerus	1	.14	.....	.....	.....	.....	1
Bursitis	1	.14	.....	1	.....	.....	.....
Other diseases of the joints (hammer toe, 2; halluxvalgus, 2; ankylosis, 1; metatarsalgia, 1; dislocation of cartilage, 1)	7	.95	3	4	.....	.....	.....
Diseases of respiratory system	16	2.17	5	7	.....	2	2
Pleurisy, chronic	5	.68	3	.....	.....	2	.....
Asthma	5	.68	1	3	.....	.....	1
Bronchitis, chronic	3	.41	.....	2	.....	.....	1
Pulmonary, emphysema	2	.27	1	1	.....	.....	.....
Goiter	1	.14	.....	1	.....	.....	.....
Diseases of the skin and cellular tissue	9	1.22	4	2	1	.....	2
Palmer abscess	2	.27	1	.....	1	.....	.....
Dermatitis, herpetiformis	2	.27	1	1	.....	.....	.....
Gangrene	1	.14	1	.....	.....	.....	.....
Painful callous, foot	1	.14	1	.....	.....	.....	.....
Eczema, chronic	1	.14	.....	.....	.....	.....	1
Other diseases of the skin and cellular tissue (bromohyperidrosis, 1; psoriasis, 1)	2	.27	.....	1	.....	.....	1
Senile debility	1	.14	1	.....	.....	.....	.....
Total	736	100.00	315	225	78	10	108
EXTERNAL CAUSES.							
Fractures	34	35.05	26	.....	8	.....	.....
Gunshot wounds	11	11.34	6	.....	4	1	.....
Crushing	7	7.22	4	.....	2	1	.....
Contusions	4	4.12	4	.....	.....	.....	.....
Incised wounds	4	4.12	1	.....	1	1	1
Dislocations	3	3.09	1	1	1	.....	.....
Sprains	3	3.09	3	.....	.....	.....	.....
Lacerated wounds	3	3.09	2	.....	1	.....	.....
Contused wounds	2	2.06	1	.....	1	.....	.....
Muscular strains	1	1.03	1	.....	.....	.....	.....
Punctured wounds	1	1.03	1	.....	.....	.....	.....
Results of injurious received before enlistment	24	24.74	.....	24	.....	.....	.....
Total	97	100.00	50	25	18	3	1
Total diseases	736	88.36	315	225	78	10	108
Total external causes	97	11.64	50	25	18	3	1
Grand total	833	100.00	365	250	96	13	109

DEATHS.

The death rate for disease for the United States was 2.83 as compared with 2.30 for 1910. The total number of deaths from all causes was 262, of which 157 were due to disease and 105 from external causes. Of the latter, 55 were accidental, 36 were suicidal, and 14 were homicidal. Among the deaths from diseases, tuberculosis caused 29 deaths in 1911 and 14 in 1910; measles 25 in 1911 and 1 in 1910; pneumonia 18 in 1911 and 23 in 1910; and organic diseases of the heart 16 in 1911 and 15 in 1910.

TABLE No. 22.—*Deaths among troops serving in the United States, continental (excluding Alaska), year 1911.*

Causes of death.	Number.	Ratio per 1,000 of—	
		Mean strength.	Deaths from disease or external causes.
DISEASE.			
Tuberculosis (of the lungs, 20; of other organs, 9)	29	0.52	184.71
Measles	25	.45	159.23
Pneumonia	18	.32	114.65
Organic disease of the heart	16	.29	101.91
Typhoid fever	6	.11	38.22
Syphilis tertiary	6	.11	38.22
Alcoholism (acute, 2; chronic, 2; delirium tremens, 1)	5	.09	31.85
Cancer	5	.09	31.85
Aneurism	5	.09	31.85
Broncho pneumonia	5	.09	31.85
Appendicitis	5	.09	31.85
Diabetes	4	.07	25.48
Chronic nephritis	4	.07	25.48
Acute cerebrospinal meningitis	2	.04	12.74
Septicemia	2	.04	12.74
Cerebral meningitis	2	.04	12.74
Apoplexy	2	.04	12.74
Pleurisy	2	.04	12.74
Acute nephritis	2	.04	12.74
Nephrolithiasis	2	.04	12.74
Cirrhosis of the liver	2	.04	12.74
Hepatic abscess	2	.04	12.74
Tetanus	2	.04	12.74
Leukemia	1	.02	6.37
Embolism	1	.02	6.37
Intestinal obstruction	1	.02	6.37
Duodenal ulcer	1	.02	6.37
Acute yellow atrophy of the liver	1	.02	6.37
Total deaths for disease	157	2.83	1,000.00
EXTERNAL CAUSES.			
Suicidal:			
By gunshot wounds (revolvers, 15; rifle, 12; shotgun, 1)	28	.51	266.67
By poisoning (phenol, 2; illuminating gas, 2; morphine, 1)	5	.09	47.62
By hanging	2	.04	19.05
By drowning	1	.02	9.52
Total suicides	36	.65	342.86
Homicidal:			
By gunshot wounds (by comrades' rifle, 2; revolver, 1-3; by civilians' revolver, 3; by policeman, revolver, 2; by sentry while attempting to escape, rifle, 2; by escaping prisoner, rifle, 1)	11	.20	104.76
By fracture of skull (in brawls, instruments unknown)	2	.04	19.05
By penetrating incised wound of abdomen (civilian, weapon unknown)	1	.02	9.52
Total homicides	14	.25	133.33
Accidental:			
By crushing (railroad accidents and injuries, 8; cave-in of banks, 2; thrown from and run over by escort wagon, 1; run over by battery limber, 1; fall from high place, 1; struck by automobile, 1; runaway team, 1; struck by street car, 1; rupture of small intestines by kick while playing football, 1)	17	.31	161.90

TABLE No. 22.—*Deaths among troops serving in the United States, continental (excluding Alaska), year 1911*—Continued.

Causes of death.	Number.	Ratio per 1,000 of— Mean strength.	Deaths from disease or external causes.
EXTERNAL CAUSES—continued.			
Accidental—Continued.			
By drowning (while bathing, 6; circumstances not given, 3; by falling into the water, 2; upsetting of canoe, 1; while attempting to swim ashore from disabled sailboat, 1)	13	0.23	123.81
By fracture of skull (railroad accidents and injuries, 2; by falling from high places, 2; by falling down stairways, 2; struck by automobiles, 2; by heavy timbers falling on soldier, 1; run over by street car, 1; thrown from wagon in a runaway, 1; circumstances not known, 1)	12	.22	114.29
By absorption of deleterious gases (illuminating gas, 2; general anesthesia, 1)	3	.05	28.57
By electric shocks	2	.04	19.05
By acute narcotic poisoning	2	.04	19.05
By fracture of spine due to falling from high place	1	.02	9.52
By dislocation of fifth cervical vertebra, thrown in wrestling bout	1	.02	9.52
By concussion of brain, struck by railroad train	1	.02	9.52
By lacerated wound of abdomen, thrown from automobile	1	.02	9.52
By wood alcohol poisoning	1	.02	9.52
By exposure and exhaustion, while wandering over the country, during an attack of mental derangement	1	.02	9.52
Total accidental	55	.99	523.81
Total external causes	105	1.89	1,000.00
Deaths from disease	157	2.83	599.24
Deaths from external causes	105	1.89	400.76
Grand total	262	4.73	1,000.00

PREVALENCE OF SPECIAL DISEASES.

TYPHOID FEVER.

Forty-four cases of typhoid fever (officers and enlisted men) occurred during the year in the Army stationed within the geographical limits of the United States, with six deaths as compared with 142 cases with 10 deaths in 1910, and 173 cases with 16 deaths in 1909. The following table shows the distribution at the different posts:

TABLE No. 23.—*Typhoid fever at military stations, 1911.*

	Admitted.	Days treated.	Constantly sick.	Died.
Maneuver camps	6	41	0.11	
Fort Logan, Colo.	5	525	1.44	
Jefferson Barracks, Mo.	3	279	.76	
Fort Sheridan, Ill.	3	143	.39	
Washington Barracks, D. C.	3	6	.02	
Fort Caswell, N. C.	3	283	.78	
Army and Navy General Hospital, Hot Springs, Ark.	2	166	.45	
Fort Porter, N. Y.	2	128	.35	
Fort Monroe, Va.	2	233	.64	
Fort Sam Houston, Tex.	2	256	.70	
13 other stations having 1 case each	13	1,056	2.89	4
Remaining from previous year and admitted by transfer		1,356	3.72	2
Total	44	4,472	12.25	6

The admission and death rates for this disease were 0.76 and 0.10, respectively. These rates for 1910 were 2.42 and 0.17 and for 1909, 3.03 and 0.28. The case mortality was 13.6 per cent as compared with 7.4 per cent for 1910 and 9.2 per cent for 1909. This case mortality rate is rather high for the Army in the United States. On the other hand, it will be noticed in the table on page 51 that 12 cases occurred among the American troops in the Philippine Islands and 12 among the native troops without a single death. Not a single case occurred among officers in the United States and only one in the Philippine Islands, that one being the case of an officer which occurred while he was on leave in Japan, but which was credited to the Philippine Islands.

The rate of incidence for white troops (officers and enlisted men) was 0.82 and for colored troops 0.34.

The following comparative table shows the most important variations in the occurrence of this disease in various posts for the year 1911 as compared with 1910, 1909, 1908, and 1907.

TABLE NO. 24.—*Typhoid fever admissions at certain posts.*

Post.	1911	1910	1909	1908	1907
Fort Logan, Colo	5	2	1	2	2
Jefferson Barracks, Mo	3	6	1	3	2
Fort Sheridan, Ill	3	6	3	1	.....
Washington Barracks, D. C	3	7	4	1	2
Fort Caswell, N. C	3	1	.....	3	2
Army and Navy General Hospital, Hot Springs, Ark	2	1	5	2	.....
Fort Porter, N. Y	2	2	1	.....	.....
Fort Monroe, Va	2	5	6	6	4
Fort Sam Houston, Tex	2	2	8	2	16
Fort Niagara, N. Y	1	3	18	.....	1
Fort Leavenworth, Kans	1	7	7	3	12
Columbus Barracks, Ohio (recruit depot)	1	4	3	6	10
Fort Slocum, N. Y. (recruit depot)	1	5	.....	1	6
Fort D. A. Russell, Wyo	.....	16	35	1	1
Fort Des Moines, Iowa	.....	5	2	10	3
Fort Sill, Okla	.....	1	16	2	.....
Fort McPherson, Ga	.....	1	10	.....	.....
Total admissions for year	44	142	173	136	124
Ratio per thousand	0.76	2.42	3.03	2.94	3.53

* * * * * * *

VACCINATION AGAINST TYPHOID FEVER.

It may now be said with a fair degree of assurance that the entire Army has been immunized against typhoid fever by the use of the typhoid prophylactic. A census of the entire Army taken on December 13, 1911, showed that there were 11,383 persons connected with the military establishment who had not at that time received the prophylactic. The work has, however, been actively continued since that time and it is very probable as stated above that all not excused for age have been immunized at this date.

As the immunization of the Army is now complete it will be of interest, even if there is some repetition of matter found in other reports, to give a full history of the development of this sanitary measure in the United States Army.

During the summer of 1908, Capt. (now Maj.) F. F. Russell, Medical Corps, United States Army, was sent to Europe to make a study of

the methods in use in England and Germany for the prevention and stamping out of typhoid-fever epidemics, both in the Army and among the civil population. Upon his return to the United States a special board was called to consider this subject, the proceedings of which are recorded in the following order:

General Orders, No. 10.

WAR DEPARTMENT,
Washington, January 21, 1909.

The proceedings of the board of officers convened by paragraph 12, Special Orders, No. 279, War Department, December 1, 1908, which are approved by the Secretary of War, are published to the Army for the information of all concerned:

Proceedings of a board of officers convened by virtue of the following order:

[Extract.]

12. A board of medical officers to consist of Brig. Gen. Robert M. O'Reilly, Surgeon General; First Lieut. Victor C. Vaughan, Medical Reserve Corps; First Lieut. William T. Councilman, Medical Reserve Corps; First Lieut. John H. Musser, Medical Reserve Corps; First Lieut. Alexander Lambert, Medical Reserve Corps; First Lieut. Simon Flexner, Medical Reserve Corps; First Lieut. William S. Thayer, Medical Reserve Corps; Capt. Frederick F. Russell, Medical Corps, recorder, is appointed to meet in this city on December 7, 1908, for the purpose of investigating the question of the advisability of immunizing the Regular and, in case of war, the Volunteer Army against typhoid fever.

Upon the adjournment of the board the officers of the Medical Reserve Corps will return to their homes or the places of receipt by them of this order. The travel directed is necessary in the military service.

* * * * * * *

By order of the Secretary of War:

J. FRANKLIN BELL,
Major General, Chief of Staff.

Official:
HENRY P. MCCAIN,
Adjutant General.

The board met at 2 p. m., all the members being present.

It proceeded to review the history of vaccination as a method of protecting troops against typhoid fever. The experience of both the English and the German colonial armies was considered.

The theory on which the practice is based as well as many details involved in carrying out the procedure were considered, as was also the probable effect on the medical profession and the public at large in the United States.

As a result of several hours discussion the board adopted, without any dissenting voices, the following conclusions:

I. The board is convinced that the practice of antityphoid vaccination is both useful and harmless and that it offers a practicable means of diminishing the amount of typhoid fever in the Army both in times of peace and war.

II. It finds that the experience to date with antityphoid vaccination justifies it in recommending the introduction of the practice in the Regular and Volunteer Armies in time o war.

III. It recommends the immediate introduction of the practice of voluntary vaccination against typhoid in the Hospital Corps, the Army Nurse Corps, and in any expedition of troops from the Regular Army which is ordered to take the field for active operations; and, further, that an opportunity be given to volunteers from the Army as a whole to be protected by vaccination against typhoid.

There being no further business before it the board adjourned sine die.

R. M. O'REILLY,
Surgeon General, U. S. Army, President.

F. F. RUSSELL,
Captain, Medical Corps, U. S. Army, Recorder.

(1457135 A.—A. G. O.)

By order of the Secretary of War.

J. FRANKLIN BELL,
Major General, Chief of Staff.

Official:
BENJ. ALVORD,
Adjutant General.

Until the spring of 1911 when the troops were mobilized in the Maneuver Camps at San Antonio, Tex., and in the separate brigades at Galveston, Tex., and San Diego, Cal., only volunteers received the prophylactic in the Army. The results obtained up to that time had, however, been so uniformly successful, there having been no unfavorable results, that when the troops were mobilized in the camps mentioned, a telegram was sent to each of the commanding generals as follows:

THE ADJUTANT GENERAL'S OFFICE,
Washington, March 9, 1911.

* * * * * * *

In view great danger from typhoid fever Secretary War has approved recommendation Surgeon General that troops that participate in maneuvers and that are not already protected against typhoid fever have antityphoid serum administered to them at once, such procedure being contemplated by General Orders, No. 10, War Department, 1909, and General Orders, No. 227, War Department, 1908.

Take action accordingly with regard to troops of your command.

Acknowledge.

By order Secretary War:

MCCAIN, *Adjutant General.*

The beneficial results of this order were discussed in the last report of this office. The results were so excellent that the War Department felt justified in taking another step in advance, and on June 9, 1911, the following order was issued to the Army:

General Orders, No. 76.

WAR DEPARTMENT,
Washington, June 9, 1911.

* * * * * * *

II. Hereafter the typhoid prophylactic will be administered, as soon as practicable after enlistment and before the men are sent away from the depots or posts at which they are enlisted, to all recruits except those over 35 years of age.

In the case of every recruit to whom the typhoid prophylactic has been administered the fact and date of completion of the administration will be noted on his descriptive and assignment card, and the notation will be transferred therefrom to his descriptive list when that list is made. A similar notation will be made on the descriptive list of every soldier, other than a recruit, to whom the prophylactic is administered.

The typhoid prophylactic is supplied by the Surgeon General.

* * * * * * *

By order of the Secretary of War:

LEONARD WOOD,
Major General, Chief of Staff.

Official:
HENRY P. MCCAIN,
Adjutant General.

The final and concluding step to make this sanitary measure compulsory for the entire Army was published in the following order:

General Orders, No. 134.

WAR DEPARTMENT,
Washington, September 30, 1911.

Paragraph II, General Orders, No. 76, War Department, June 9, 1911, is amended to read as follows:

The typhoid prophylactic will be administered to all officers and enlisted men in the Army under the age of 45 years who have not already received it, or who have not already had a well-defined case of typhoid fever, and who are on duty at stations where the services of a medical officer are available for this purpose. Officers and enlisted men under 45 years of age on detached service, leave, or furlough at places where the services of a medical officer are not available will receive the typhoid prophylactic upon their arrival at the first station where its administration is practicable.

Hereafter the typhoid prophylactic will be administered at the places of enlistment, as soon as practicable after enlistment, to all recruits under 45 years of age who have

not been subjected to the prophylaxis within two years, unless because of special assignment or other reason the men are not to remain at the station long enough to allow the completion of the prophylaxis, in which event it will be administered immediately after they join the organizations or stations to which they are assigned. All men reenlisting who have not had the typhoid prophylactic administered to them will be regarded as recruits for the purpose of this order.

On the descriptive and assignment card of every recruit will be noted "Typhoid prophylaxis completed ———" (date) or "Typhoid prophylactic not administered," as the case may be. In the latter case, company and detachment commanders will see that the prophylactic is administered immediately after the men join the organizations or stations to which assigned. In every case where the prophylactic has been administered, the remark "Typhoid prophylaxis completed ———" (date) will be entered on the soldier's descriptive list.

If any soldier under 45 years of age on reenlistment alleges that he has been subjected to the typhoid prophylaxis within two years, and the allegation is not verified by the soldier's medical record, the burden of proof will be upon the soldier to show to the satisfaction of the examining surgeon that he has been subjected to the prophylaxis within two years, or has had a well-defined case of typhoid fever; if the soldier can not present evidence in the matter satisfactory to the examining surgeon, the prophylactic will be administered to him as soon as practicable.

The typhoid prophylactic is supplied by the laboratory of the Army Medical Museum, Washington, D. C.

[1816561, A. G. O.]

By the order of the Secretary of War:

WM. H. CARTER,
Major General, Acting Chief of Staff.

Official:

HENRY P. MCCAIN,
Adjutant General.

It has been fairly demonstrated to the medical profession and the general public that the immunization of troops against typhoid fever by the typhoid prophylactic is a thoroughly practical measure for the prevention of the disease, and that its protective value is only second in importance to vaccination against smallpox. It will be noticed in the table on page 51 that in the entire Army for the year 1911 there were 70 cases of typhoid, 11 of which were in immunized persons. It was not possible to check up all of these 11 cases or to confirm the diagnosis in all of them by blood cultures. There is a possibility that some of them may have been paratyphoid or fevers of undetermined origin. Since the beginning of the year 1912 each case as it is reported has been carefully investigated. Surgeons are required to furnish a complete history of every case, giving in detail the methods used in arriving at the diagnosis. This office insists that in each case, if possible, the diagnosis be confirmed by a blood culture or by a culture from the feces or urine. Since the Widal reaction occurs in practically all persons who have received the prophylactic and persists in the blood for some time thereafter, it can not be considered as positive evidence of the presence of typhoid fever in an immunized person. It is recognized that it is not possible in every case of typhoid fever to confirm the diagnosis by cultures and it is not the intention of this office to refuse to accept such a diagnosis when the clinical findings are clear. It is believed, however, that in practically all of the cases of typhoid it should be possible to isolate the organisms from the blood, or from the urine or feces, at some time during the course of the disease.

The United States Army is the only one in which this immunization against typhoid fever is mandatory. It is therefore especially desirable that true and accurate statistics should be obtained to determine as far as possible the efficiency of this measure.

Referring again to the tabular statement on page 51, it is interesting to note that 12 cases occurred among the American troops in the Philippine Islands and 12 among the native troops without a single death. In 1910 there were 31 cases among the American troops, with 2 deaths, and 13 cases among the native troops, with 1 death. It is thus apparent that there was a very material reduction in the number of cases among American troops, and but slight reduction in the number among the native troops. This is to be accounted for by the fact that a large percentage of the American troops had been voluntarily immunized against typhoid fever and that none of the native troops had been. General Orders, No. 134, quoted above, was not sent to the printer until September 30, 1911, and the distribution of this order was not begun until some weeks later. Practically no work was done in compliance with this order in the Philippines until early in the present year. The advancement in other sanitary measures had been practically the same for both American and native troops.

During the first six months of 1912, as far as can be determined from the information on hand (up to August 15), 7 cases have occurred in the United States, with 1 death. The following list shows the date and place of occurrence and other information in regard to these cases. During the same period in 1911 there were 24 cases in the United States, with 5 deaths:

Place.	Date when admitted to hospital.	Was the typhoid prophylactic given.	Result.	Remarks.
	1912.			
Fort McDowell	Jan. 8	No	Recovered	
Fort Slocum	Feb. 1	Yes	do	
Columbus Barracks	Feb. 8	No	Died	Infection prior to enlistment.
Do	Mar. 5	No	Recovered	Do.
Washington, D. C.	Mar. 16	No	do	
Field, California	June 4	Yes	do	
Jefferson Barracks	June 24	No	Remaining July 31, 1912.	Do.

Owing to the large number immunized since the last issue of the annual report of this office, it has not been possible to record and tabulate the effects of the vaccination as has been done in reports heretofore. However, there was a sufficient number of cases, with results, published in the last annual report to give a very definite idea relative to this phase of the question. Since that time practically no bad results have been reported. In the case of one officer immunized at the maneuver camp in Texas a neuritis developed in the arm in which the prophylactic was administered. This persisted for several months. It is very probable that in this case the needle was inadvertently introduced into the sheath of one of the small nerves. In a few cases severe reactions have been reported, yet no permanent damage has resulted, normal health being regained in a few days. It is probable that some of these are due to intramuscular injection of the vaccine, with consequent rapid absorption. The directions that have been furnished with the prophylactic have at all times specified that the vaccine should be injected subcutaneously and that it should not be injected directly into the muscles or into the skin itself.

Since the last report of this office the typhoid prophylaxis has been made compulsory for the United States Navy. The prophylactic has been furnished for this purpose by the laboratory of the Army Medical School. Steps have also been taken by the Department of Agriculture and the Department of the Interior to encourage as many as possible of their field employees to voluntarily accept immunization against typhoid by the use of the prophylactic. A letter was addressed by both of these departments to the Secretary of War requesting that the Surgeon General of the Army be allowed to furnish the prophylactic to their respective departments for that purpose. This authority was granted by the Secretary of War, and the material has been furnished. Recently the same request has been received from the Post Office Department. Militia medical officers have been encouraged to secure volunteers among the militia organizations. Some of them have been very active in this work. The Army Medical School has also furnished the prophylactic for their use. The demands for the serum by the Army, Navy, the Militia, and the departments mentioned have been so great that it has been impossible to furnish more than a small quantity to civil communities.

It is recommended that whenever it may become necessary to mobilize either the militia or volunteer troops in the field that this measure be made compulsory for them. In case this is done it is believed that it will be impossible in the future for large epidemics of typhoid fever to occur in the United States Army. Of course an occasional case will develop, but typhoid fever will cease to be a scourge to the Army in the future as it was in the past, and will disappear even as smallpox has practically disappeared in armies as the result of vaccination. Among the sanitary achievements of the Medical Department in preventive medicine since the time of the Spanish-American War this sanitary measure for the prevention of typhoid fever should, it is believed, rank second in importance only to the discovery of the method of transmission of yellow fever.

VENEREAL DISEASES.

The question of prevention of venereal diseases has during the past year continued to claim much time and attention on the part of medical officers throughout the Army and of this office, and much faithful work has been done in the instruction of recruits and efforts in other ways to prevent exposure to infection and to prevent infection after exposure. It was hoped, therefore, that the good results of this work might be shown in the venereal statistics. This hope has, however, been disappointed so far as the record for syphilis is concerned, and owing to the increased number of cases of that disease the figure for all venereal diseases has increased, as shown in the following tabular statement:

	Entire Army.		Army in the United States proper.	
	1910	1911	1910	1911
Admissions per 1,000	174.95	185.13	155.51	163.85
Original admissions (cases)	154.91	163.49	137.98	145.29
Constantly noneffective rate	11.51	10.14	10.14	8.82

The following tables give the occurrence of venereal diseases in the Army and the comparative rates for the past five years for each of these diseases in the United States:

TABLE No. 25.—*Venereal diseases—Admissions and discharges, Army, American troops, year 1911.*

[Mean strength—72,748.]

	Syphilis.		Chancroids.		Gonorrhea.		Total.	
	Admissions.	Discharges.	Admissions.	Discharges.	Admissions.	Discharges.	Admissions.	Discharges.
United States	2,447	29	1,383	.....	5,221	44	9,051	73
Alaska	7	.....	1	.....	31	.....	39	.....
Hawaii	102	4	32	.....	219	1	353	5
Philippines	972	2	1,102	1	1,726	5	3,800	8
Canal Zone, Panama	8	.....	7	.....	9	.....	24	.....
Transports	38	.....	35	.....	127	.....	200	.....
Total	3,574	35	2,560	1	7,333	50	13,467	86
Ratio per 1,000 of mean strength	49.13	0.48	35.20	0.01	100.80	0.68	185.13	1.18

Days	269,329
Constantly sick	737.89
Ratio per 1,000	10.14

TABLE No. 26.—*Venereal diseases by years, 1907 to 1911, United States, continental (excluding Alaska).*

	Admitted.			Discharged on certificate of disability.			Died.			Noneffective.		
	Total.	White.	Colored.	Total.	White.	Colored.	Total.	White.	Colored.	Total.	White.	Colored.
Gonorrhea and results:												
1911	94.52	94.48	95.12	0.79	0.84	.....	.....	.....	.....	4.68	4.72	3.93
1910	102.44	102.17	107.17	.77	.78	0.67	.....	.....	.....	5.90	5.98	4.41
1909	125.27	124.49	147.37	1.36	1.34	2.08	.....	.....	.....	7.22	7.23	7.02
1908	123.50	123.05	151.93	1.06	1.08	.....	.....	.....	.....	6.71	6.72	6.18
1907	107.68	107.68	107.59	1.39	1.37	1.92	0.03	.....	0.96	6.24	6.29	4.63
Chancroid:												
1911	25.04	25.22	21.82	.....	.....	.....	.....	.....	.....	1.32	1.34	1.05
1910	26.42	25.83	36.84	.....	.....	.....	.....	.....	.....	1.53	1.51	1.86
1909	25.33	25.09	32.13	.....	.....	.....	.....	.....	.....	1.54	1.52	2.03
1908	28.20	27.64	63.54	.04	.02	1.38	.....	.....	.....	1.75	1.71	4.38
1907	34.78	34.38	48.03	.....	.....	.....	.....	.....	.....	2.23	2.21	2.73
Syphilis:												
1911	44.30	45.33	25.91	.52	.48	1.36	.11	0.11	.....	2.82	2.85	2.30
1910	26.65	26.68	26.12	1.13	1.16	.67	.04	.04	.....	2.71	2.75	2.07
1909	26.85	26.47	37.74	1.92	1.81	5.19	.....	.....	.....	2.68	2.64	3.74
1908	23.15	22.46	66.30	1.62	1.64	.....	.04	.04	.....	2.17	2.14	3.46
1907	25.36	25.43	23.05	2.36	2.43	.....	.....	.....	.....	2.75	2.76	2.45
Total venereal:												
1911	163.85	165.03	142.85	1.31	1.31	1.36	.11	.11	.....	8.82	8.91	7.29
1910	155.51	154.69	170.13	1.90	1.94	1.34	.04	.04	.....	10.14	10.25	8.34
1909	177.46	176.04	217.24	3.28	3.14	7.27	.....	.....	.....	11.44	11.39	12.79
1908	174.84	173.14	281.77	2.73	2.75	1.38	.04	.04	.....	10.63	10.57	14.02
1907	167.82	167.49	178.67	3.74	3.80	1.92	.03	.....	.96	11.22	11.26	9.81

It will be seen from these tables that the rate for venereal diseases (all) was 163.85 in 1911, as compared with 155.51 in 1910. Upon further analysis, however, it will be noticed that the rate for gonorrhea was only 94.52 per 1,000 in 1911, as compared with 102.44 for 1910, or a decrease of 8.92 per 1,000, and that for chancroids it was 25.04

in 1911, as compared with 26.42 in 1910, or a decrease of 1.38 per 1,000. It is apparent, therefore, that the only increase has been in the admission rate for syphilis. This rate for 1911 was 44.30, as compared with 26.65 for 1910, or an increase of 17.65 per 1,000, or 66.2 per cent.

The rate for syphilis prior to 1911 had been quite uniform for several years, but there has been a striking increase in the number of cases during 1911, so that there was a case rate per 1,000 of 40.1 as compared with 24.6 in 1910, and a similar rate for preceding years. This increase is not due to an increase in exposure, because the case rate for other venereal diseases is diminished as shown by Table No. 26, that for gonorrhea having dropped from 100.8 per 1,000 in 1910, to 90.5 in 1911. It can be traced to the use of the Wassermann reaction, which has revealed the syphilitic nature of many cases not recognized before, and to the introduction of salvarsan in January, 1911, which has greatly stimulated interest in the treatment of the disease. In some posts a Wassermann survey of the entire garrison has been made and naturally many latent cases have been discovered and recorded. The reaction has also been used on many recruits and in discharge proceedings. The effect of the introduction of salvarsan is seen in the fact that over 2,100 cases were treated in 1911. This is over 70 per cent of the total and in the preceding year only 1,764 cases were recorded. In short the rate of 40.1 represents the maximum of infection which could be found by active efforts, while the usual rate of about 25 represents the more active and obvious cases which demand attention.

The following table shows the admission rate for syphilis for the past five years in the various stages:

TABLE NO. 27.—*Syphilis, United States, years 1907–1911.*

Year.	Primary syphilis.		Secondary syphilis.		Tertiary syphilis.		Hereditary syphilis.		Total.	
	Admission rates.	Non-effective rates.	Admission rates.	Non-effective rates.	Admission rates.	Non-effective rates.	Admission rates.	Non-effective rates.	Admission rates.	Non-effective rates.
1907	2.62	0.21	20.75	2.32	1.99	0.23	.....	.....	25.36	2.75
1908	2.57	.14	18.31	1.71	2.27	.31	.....	.....	23.15	2.17
1909	3.20	.24	21.67	2.17	1.96	.27	0.02	0.0001	26.85	2.68
1910	3.24	.23	19.96	2.00	2.01	.36	.12	.01	25.33	2.60
1911	4.09	.26	35.54	2.14	4.29	.43	.38	.02	44.30	2.85

* * * * * * *

On January 26, 1912, a letter was sent to The Adjutant General of the Army by this office with the request that a copy of it be referred to each post surgeon in this country and outlying possessions, in which information was requested as to the amount and character of the instruction given to soldiers with reference to the reproductive system and the dangers of incontinence, the methods of preventive in use, the frequency of physical inspections of the men, and the measures taken to punish those who acquire disease by neglect to make use of methods of prevention.

Replies to this letter have been received from the post surgeons in the United States, Porto Rico, Hawaii, and Alaska.

(1) Almost without exception the surgeons report that the men have been instructed in the physiology of the reproductive system and the dangers of illicit intercourse. This instruction has been given in nearly every post by the surgeon or by a medical officer in a lecture to the men one or more times a year, and in some places as often as twice a month. At a great many of the posts, perhaps the majority, leaflets or pamphlets have been printed and distributed to the men describing in plain and concise language such things as they should know in regard to this subject. At a few of the posts, magic-lantern slides have been obtained and illustrated lectures given by the surgeons. It may well be said that every enlisted man in the Army has received instruction in regard to these matters and that they are well informed regarding the dangers of illicit sexual intercourse. It has been made clear to them also that sexual intercourse is not necessary for a healthy bodily condition, and that sexual purity is a thing that is much to be desired.

(2) No attempt has been made by the War Department or by this office until recently to prescribe what system of prophylaxis should be used for those who have not the moral stamina and self-control to observe continence. It was believed that it was better to allow the chief surgeons and post surgeons to experiment as much as they desired with all the possible different systems. Only in this way was it possible to finally form an accurate opinion of the most successful system.

* * * * * * *

(3) In the Department of the East and after July 1 in the Eastern Division as a whole, physical examinations were made of all enlisted men, except the married ones, twice each month by medical officers. This inspection was in accordance with a division order. As a rule the hour was known beforehand. In the Department of the Lakes, and after July 1, the Central Division, this same inspection was made twice a month in accordance with a division order. These inspections were made by a noncommissioned officer, under instruction of a medical officer.

Inspections were made at quite a few posts in the Western Division, although as far as this office has been informed, there was no division order requiring it. As pointed out in the discussion in regard to sanitation in the United States, on page 90 of this report, these inspections were found to be of very material benefit for reasons other than the detection of concealed cases of venereal disease. They make possible the detection and the proper treatment of practically all cases of venereal diseases at the posts where practiced. It is possible for some chronic cases to escape detection at these inspections but quite difficult for acute cases to do so. It was found especially desirable to have these inspections wherever systematic attempts were made at venereal prophylaxis; otherwise it would have been impossible to form any definite opinion as to the results obtained.

(4) At only a few posts were men punished by court-martial for contracting venereal diseases. At some few posts orders were issued

that men who exposed themselves to the possibility of venereal infection should avail themselves of the means of prophylaxis provided, and if upon inspection they were found diseased, they were subject to court-martial and punishment, if it could be proven that they had failed to comply with the order.

It is at once apparent that the only one of the systems of prophylaxis mentioned with which it is possible to convict the men of failure to comply with the order to use prophylactic measures after subjecting themselves to the danger of infection is the hospital method. A careful record is kept of the name, rank, and organization of each man who applies for treatment, with the date. Then whenever anyone is detected with venereal diseases, if his name does not appear upon the record, he can be convicted for failure to comply with the order. This hospital method was used to best advantage at Jefferson Barracks and at Columbus Barracks.

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(5) It is interesting to note to what extent the opinion prevails throughout the Army among the surgeons and post commanders that the men should be punished if they contract venereal disease and if it can be proven that they have failed to avail themselves of proper protective measures. Fifty-five surgeons in the United States expressed the opinion that men should be punished as outlined above and only two expressed an opinion contrary to this view. Forty-one post commanders were in favor of some plan and eight were opposed. It is also interesting to note that 45 surgeons expressed an opinion in favor of stoppage of pay for officers and men while sick in hospital or quarters on account of venereal diseases and none expressed an opinion opposed to this view. Twenty-seven commanding officers were also in favor of this measure and only two opposed it. It may well be said that the opinion in favor of punishment and of stoppage of pay was almost unanimous.

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The Secretary of War, in his annual report for the year 1911, made the following recommendation:

> The Surgeon General recommends the stoppage of pay for time lost on account of venereal diseases as one important step to be taken. This opinion is shared by a large number of officers of general and field rank who have given the matter careful consideration. I concur with this recommendation, and I urge that legislation be passed which will authorize the stoppage of pay of both officers and men during time of disability for active service caused by such diseases.

In accordance with this recommendation a clause was embodied in the appropriation bill in the House of Representatives, as follows:

> Pay of enlisted men * * * : *Provided*, (12) That no part of the appropriation in this act for the pay of officers and enlisted men shall be paid to any officer or enlisted man in active service for any period of time lost by him on account of diseases which are the result of his own intemperate use of drugs or alcoholic liquors or other misconduct.

This clause was slightly changed in the Senate, to read as follows:

> *Provided*, (12) That any officer or enlisted man in active service who shall be absent from duty on account of disease resulting from his own intemperate use of drugs or alcoholic liquors or other misconduct shall not receive pay for the period of such absence from any part of the appropriation in this act for the pay of officers or enlisted

men, the time so absent and the cause thereof to be ascertained under such procedure and regulations as may be prescribed by the Secretary of War.

The clause as passed by the Senate was agreed to in conference and passed both Houses of Congress.

This stoppage of pay will, it is believed, do as much or more than anything else that can be done to lessen the venereal rate in the Army. Until the enlisted man can be made to realize the necessity of the prevention of venereal diseases not much can be accomplished. Heretofore many of them have been apparently perfectly willing to stay in the hospital for several months with venereal diseases while their companions did the duty that they should have been doing. Some surgeons have, in fact, stated as their opinion that men have willfully contracted venereal diseases in order to escape disagreeable duties, such as practice marches, etc. It is extremely difficult to make the average man either in the Army or in civil life realize the seriousness of gonorrheal infection.

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MALARIA.

The occurrence of malarial fever, as shown by Chart M, continues to decrease. The admission rate for 1911 was 14.68 as compared with 16.36 for 1910, 23.06 for 1909, and 26.69 for 1908, which in its turn was the lowest on record in this office. This continuous improvement is to be credited not alone to the efforts of medical officers, supported by commanding officers, but also to the liberal provision of wire-gauze screens for doors and windows by the Quartermaster's Department.

Table No. 29 shows the relative incidence of the various forms of malarial infection for the past five years. Not a single death has occurred in the Army in the United States from malarial fever since 1906.

TABLE NO. 29.—*Malarial infections, United States, continental (excluding Alaska), year 1911.*

[Ratio per 1,000 of mean strength.]

Malarial fevers.	Admitted.			Discharged on certificate of disability.			Died.			Noneffective.		
	Total.	White.	Colored.	Total.	White.	Colored.	Total.	White.	Colored.	Total.	White.	Colored.
Quartan and tertian:												
1911	13.63	14.36	0.68	.....	.....	.....	.....	.....	.....	0.29	0.30	0.01
1910	14.57	15.18	3.68	.....	.....	.....	.....	.....	.....	.28	.29	.06
1909	20.29	20.74	7.65	.....	.....	.....	.....	.....	.....	.41	.42	.13
1908	24.12	24.33	11.05	.....	.....	.....	.....	.....	.....	.49	.49	.14
1907	28.44	29.28	.96	.....	.....	.....	.....	.....	.....	.53	.54	.02
Estivo-autumnal:												
1911	.89	.94	.....	.....	.....	.....	.....	.....	.....	.04	.04	.....
1910	1.36	1.39	1.00	.....	.....	.....	.....	.....	.....	.05	.05	.03
1909	1.96	1.99	1.02	.....	.....	.....	.....	.....	.....	.07	.07	.03
1908	2.09	2.11	1.38	.....	.....	.....	.....	.....	.....	.08	.08	.04
1907	1.51	1.55	.....	.....	.....	.....	.....	.....	.....	.08	.08	.....
Malarial cachexia and undetermined malarial infections:												
1911	.16	.17	.....	.....	.....	.....	.....	.....	.....	.02	.02	.....
1910	.43	.46	.....	.....	.....	.....	.....	.....	.....	.03	.03	.....
1909	.80	.83	.....	0.02	0.02	.....	.....	.....	.....	.04	.04	.....
1908	.47	.48	.....	.....	.....	.....	.....	.....	.....	.01	.01	.....
1907	.26	.26	.....	.....	.....	.....	.....	.....	.....	.02	.02	.....
Total malarial diseases:												
1911	14.68	15.47	.68	.....	.....	.....	.....	.....	.....	.35	.36	.01
1910	16.36	17.02	4.69	.....	.....	.....	.....	.....	.....	.36	.37	.09
1909	23.06	23.57	8.67	.02	.02	.....	.....	.....	.....	.51	.53	.16
1908	26.69	26.91	12.43	.....	.....	.....	.....	.....	.....	.58	.59	.18
1907	30.20	31.09	.96	.....	.....	.....	.....	.....	.....	.63	.65	.02

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TABLE NO. 30.—*The 10 posts in the United States having the highest admission rates for malarial diseases, 1911.*

[Ratio per 1,000 of mean strength.]

Post.	Mean strength.		Malarial diseases, total ratio.	
	1911	1910	1911	1910
Fort Washington, Md.	420	531	333.33	237.29
Washington Barracks, D. C.	658	568	185.41	14.08
Fort Apache, Ariz.	116	128	103.45	.....
Fort Hunt, Va.	110	119	90.91	92.44
Fort Logan H. Roots, Ark.	279	255	60.93	54.90
Fort Howard, Md.	406	456	56.65	28.51
Fort Mott, N. J.	201	221	44.78	.....
Fort Caswell, N. C.	323	342	37.15	32.16
Boise Barracks, Idaho.	136	128	36.76	109.37
Fort Rodman, Mass.	146	117	34.25	.....
Total United States, continental (excluding Alaska)	55,240	55,680	14.68	16.36

Fort Washington this year, as for the last several years, has the unenviable reputation of having the highest admission rate for any post in the United States. The rate in 1911 was 333.33 per 1,000, as compared with 237.29 for 1910, 215.77 for 1909, 144.30 for 1908, 363.64 for 1907, and 736 for 1906. The rate in 1910 was higher than any post in the Philippine Islands except Camp Stotsenburg. In 1911 it was higher than that for any post in the Philippine Islands.

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UNDETERMINED FEVERS.

The admission rate for these fevers for the United States was 2.50, as compared with 2.42 for 1910, 2.15 for 1909, 3.80 for 1908, and 4.67 for 1907. It will be noted that the rates for these fevers are higher this year than last for Alaska and Hawaii, but lower for the transports and the Philippine Islands. The total rate was 3.37 for 1911, as compared with 3.89 for 1910. The different diagnoses included under this heading and the number of admissions are given in the following table:

TABLE No. 31.—*Undetermined fevers, 1911, American troops, by countries—enlisted men.*

Diseases.	United States.	Alaska.	Hawaii.	Philippine Islands.	Canal Zone, Islands.	Transports.	Total.
Febricula	39	1	5	47	.....	.....	92
Fever, simple continued	7	.....	1	23	.....	.....	31
Fever, type undetermined	80	.....	3	12	11	2	108
Ephemeral fever	9	.....	.....	2	.....	.....	11
Thermic fever	3	.....	.....	.....	.....	.....	3
Total	138	1	9	84	11	2	245
Ratio per 1,000 of mean strength	25.0	0.89	4.47	6.74	53.92	1.18	3.37

TUBERCULOSIS.

The admission rate for tuberculosis (all) for 1911 was 3.89 per 1,000 for the United States, with a death rate of 0.52 as compared with an admission and death rate of 3.52 and 0.25, respectively, for 1910, and with 4.74 and 0.65 for 1909. The discharge rate was 2.85 as compared with 4.01 for 1910, 2.10 for 1909, and 2.77 for 1908 and 3.93 for 1907. Table No. 32 shows the posts having more than one case for 1911, and also those for 1910, for purpose of comparison.

TABLE No. 32.—*Tuberculosis (all) at Army stations, United States, continental (excluding Alaska), year 1911 compared with 1910—enlisted men.*

	Admissions, year 1911.		Admissions, year 1910.	
	Number.	Ratio per 1,000 of mean strength.	Number.	Ratio per 1,000 of mean strength.
Vancouver Barracks, Wash	22	21.96	9	7.98
Letterman General Hospital, San Francisco, Cal	11	41.20	9	31.47
Presidio of San Francisco, Cal	11	5.60	13	5.42
General Hospital, Fort Bayard, N. Mex	8	64.00	7	56.91
Fort D. A. Russell, Wyo	7	4.29	8	3.48
Columbus Barracks, Ohio	6	4.72	5	4.80
Fort McDowell, Cal	6	7.52	1	1.72
Fort Hamilton, N. Y	5	11.06	2	3.82
Fort Sam Houston, Tex	5	3.10	4	2.51
Fort Baker, Cal	4	10.84	5	11.79
Madison Barracks, N. Y	4	8.06	.....	.....
Fort Adams, R. I	3	5.43	1	1.61
Fort Barrancas, Fla	3	6.45	2	3.48
Fort Du Pont, Del	3	7.21	3	5.70
Fort Ethan Allen, Vt	3	3.88	1	1.43
Fort George Wright, Wash	3	6.40	1	2.42
Fort Lincoln, N. Dak	3	11.67	3	15.63
Fort Logan, Colo	3	5.24	.....	.....
Fort Mackenzie, Wyo	3	8.77	1	2.08
Fort McIntosh, Tex	3	9.49	.....	.....
Fort Oglethorpe, Ga	3	9.84	2	2.99
Fort Slocum, N. Y	3	2.44	7	7.24
Fort Totten, N. Y	3	4.72	1	1.38
Walter Reed General Hospital, Takoma Park, D. C	3	21.43	1	7.81
Jefferson Barracks, Mo	2	1.66	5	5.10
Fort Leavenworth, Kans	2	1.63	3	1.55

TABLE No. 32.—*Tuberculosis (all) at Army stations, United States, continental (excluding Alaska), year 1911 compared with 1910—enlisted men.* Continued.

	Admissions, year 1911.		Admissions, year 1910.	
	Number.	Ratio per 1,000 of mean strength.	Number.	Ratio per 1,000 of mean strength.
Fort Myer, Va	2	3.07	4	4.97
Fort Porter, N. Y	2	8.73	2	12.15
Fort Benjamin Harrison, Ind	1	5.59	6	7.70
Fort Monroe, Va	1	.93	5	4.09
Fort Robinson, Nebr	1	2.15	4	8.68
Fort Snelling, Minn	1	2.17	4	3.99
Alcatraz Island, Cal			3	18.63
Boise Barracks, Idaho			3	28.42
Fort Des Moines, Iowa			3	4.95
Fort Thomas, Ky			3	6.49
Washington Barracks, D. C			3	5.55
14 posts, not included above, had 2 cases each in 1911	28			
16 posts, not included above, had 2 cases each in 1910			32	
17 posts, not included above, had 1 case each in 1911	17			
19 posts, not included above, had 1 case each in 1910			19	
Maneuver camps, field, etc., 1911	30			
Camps of instruction, field, etc., 1910			10	
Total	215	3.89	156	3.52

The above table, taken in connection with a study of its occurrence in organizations, apparently shows clearly that the prevalence of tuberculosis in a post as well as in a company one year does not to a marked extent influence its occurrence in the following year.

Of the 122 men who were treated for tuberculosis during the year, 86 or 74 per cent, were below the standard proportion of weight to height, while 12, or 18 per cent, were below the minimum allowed for each height. The attitude of this office is that certainly no man should be accepted for first enlistment or for commission whose weight is below the minimum standard required for his height. If this rule were strictly adhered to, fewer cases of pulmonary tuberculosis would occur in the service.

Prior to August 1, 1910, commanding officers of military posts or stations, upon the receipt of a certificate from the senior medical officer of a post or station that a soldier was a proper subject for treatment at the general hospital, Fort Bayard, were authorized to send suitable cases there for treatment. General Order No. 151, War Department, August 1, 1910, however, directed that the papers in all cases of pulmonary tuberculosis be sent to the War Department for action. This order was found to cause too great a delay in transferring cases there. In accordance with a recommendation from this office, this requirement was amended April 12, 1912. Division commanders are now authorized to send suitable cases to Fort Bayard. It is, however, stipulated that—

> No enlisted man will be recommended for transfer to Fort Bayard unless he is willing if discharged to remain at that hospital for treatment as a beneficiary of the Soldiers' Home for a period of three months from admission thereto. Soldiers suffering from pulmonary tuberculosis who do not desire treatment at the hospital will be recommended for discharge on certificates of disability.

Table No. 33 shows the movement of cases and also the distribution of this disease by countries.

TABLE NO. 33.—*Occurrence of tuberculosis (all) among American troops, Army, year 1911, by years, of service—enlisted men.*

	During first year of service.	During second year of service.	During third year of service.	During fourth year of service.	During fifth year of service.	During sixth year of service and over.	Total.
United States, continental (excluding Alaska):							
Mean strength	10,204	6,589	11,852	6,043	3,518	17,034	55,241
Admitted	47	17	33	28	11	65	200
Ratio per 1,000 of mean strength	4.61	2.58	2.78	4.63	3.13	3.82	3.64
Duty	5	1	5	3	1	7	22
Died	5		2	3	1	13	24
Discharged on certificate of disability	26	12	20	10	3	18	89
Otherwise	2	1	2		1	1	7
Remaining Dec. 31, 1911	9	3	4	12	5	26	59
Philippines:							
Mean strength	2,267	1,349	2,672	974	675	4,517	12,454
Admitted	15	5	6	2		19	47
Ratio per 1,000 of mean strength	6.62	3.71	2.25	2.05		4.21	3.77
Duty				1		3	4
Died			1				1
Discharged on certificate of disability	9	4	4			5	22
Remaining Dec. 31, 1911	6	1	1	1		11	20
Alaska:							
Mean strength	64	66	213	134	91	551	1,119
Admitted						3	3
Ratio per 1,000 of mean strength						5.44	2.68
Died						1	1
Discharged on certificate of disability						1	1
Remaining Dec. 31, 1911						1	1
Hawaii:							
Mean strength	474	352	428	127	103	530	2,014
Admitted	3	1					4
Ratio per 1,000 of mean strength	6.33	2.84					1.99
Discharged on certificate of disability	2	1					3
Remaining Dec. 31, 1911	1						1
Transports:							
Mean strength	569	181	145	199	91	515	1,700
Admitted	3						3
Ratio per 1,000 of mean strength	5.27						1.76
Died	1						1
Discharged on certificate of disability	2						2
Total Army:							
Mean strength	13,659	8,547	15,338	7,495	4,496	23,213	72,748
Admitted [1]	68	23	39	30	11	87	258
Ratio per 1,000 of mean strength	4.98	2.69	2.54	4.00	2.45	3.75	3.55
Duty	5	1	5	4	1	10	26
Died	6		3	3	1	14	27
Discharged on certificate of disability	39	17	24	10	3	24	117
Otherwise	2	1	2		1	1	7
Remaining Dec. 31, 1911	16	4	5	13	5	38	81

[1] Of the 272 cases admitted in 1911, 14 were returned to duty and readmitted, leaving 258 individuals to be accounted for, giving a ratio of 3.55 per 1,000 of mean strength.

CEREBROSPINAL MENINGITIS.

Two cases of this disease occurred during the year with two deaths. In 1910 there were four cases with three deaths, in 1909 and 1908 there were 13 cases each with 7 deaths, and in 1907 there were 33 cases with 30 deaths. The two cases occurred at Fort Robinson, Nebr., in May.

During the early part of 1912 there was quite an extensive epidemic of this disease in the State of Texas. It was considered advisable during the height of the epidemic to discontinue recruiting at the infected points. No case occurred during the epidemic at any post in Texas.

INSANITY.

The admission rate for insanity for the United States was 1.68 per 1,000 as compared with 1.58 for 1910, 1.63 for 1909, 1.58 for 1908, and 1.79 for 1907. The noneffective rate was 0.46 per 1,000, as compared with 0.32 for 1910, 0.29 for 1909, and 0.31 for 1908.

ALCOHOLISM IN THE UNITED STATES.

The admission rate for alcoholism in the United States for the year 1911 was 20.31, which is quite a material improvement over the preceding year, when it was 23.51. It is gratifying to observe that this rate has shown a steady diminution since 1907, following an equally steady rise for eight years before 1907. It is interesting to note that the rate for 1911 is the lowest for any year since 1870, except for the years 1898 and 1899, when the rates were approximately 16 and 18 per 1,000. As these were years of war, when such rates are usually lower, they can hardly be taken as a basis of comparison. These rates do not represent the amount of intemperance existing in the Army, but as they are all calculated from similar data, that is, the number of cases in which medical assistance was invoked to avert danger, they are useful as an index of alcoholic excess.

SMALLPOX.

Only 4 cases of smallpox occurred during the year. There was no death. These cases occurred, 1 at Fort Logan, Colo., in January; 1 in the camp near Fort Bliss, Tex., in May; 1 at Fort McDowell, Cal., in October; and 1 at Vancouver Barracks, Wash., in December.

DIPHTHERIA.

During the year 43 cases occurred. There was no death and 1 discharge resulting. Twelve of these cases were at Fort Mackenzie (Jan. 7, Mar. 1, Oct. 2, and Dec. 2), 10 at Fort Sam Houston (December); 4 at Leavenworth (November); 4 at Jefferson Barracks (June, August, September, and December); 2 at Madison Barracks (October and November), and 2 at Plattsburg Barracks in December. The other cases each occurred at separate posts.

MEASLES.

During the year 1911, 1,101 cases of measles occurred in the United States, with 25 deaths. Three hundred and ninety-two of these cases, with 18 of the deaths, occurred at Columbus Barracks.

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INFLUENCE OF STATION.

The posts having the highest noneffective rate this year are Fort Bliss, Tex.; Fort Sam Houston, Tex.; and Fort Screven, Ga., in the order named, the rates being, respectively, 75.96 per 1,000, 70.27 per 1,000, and 40.76 per 1,000. The high noneffective rate at Fort Bliss and Fort Sam Houston, as explained in the footnote in table No. 33, is partially to be attributed to cases received by transfer from the maneuver division and from the troops in the field in Texas. It will be noticed, however, by referring to the column for the average number of days lost for each case, that Fort Bliss and Fort Sam Houston have the unenviable reputation of standing first and second, respectively, with rates of 36.30 and 29.00. In other words, each case admitted to hospital at Fort Bliss remained on sick report for an average of 36.3 days.

The posts having the highest admission rate for the year are Fort Washington, Md.; Jackson Barracks, La.; and Fort Mott, N. J., in the order named. As is stated repeatedly in this report, however, the noneffective rate is the true measure of the effect of sick report upon military efficiency. The noneffective rate at these three posts having the highest admission rate was much lower than the three posts mentioned with the highest noneffective rates, and also lower than several others not mentioned. The average number of days treatment for each case at Fort Washington was 8.62, at Jackson Barracks 11.06, and Fort Mott 5.05.

The five posts having the lowest noneffective rates for this year are all Coast Artillery posts, except the second—Fort Ontario, N. Y. The first three of these posts are Fort Warren, Mass; Fort Ontario, N. Y.; and Fort Greble, R. I., with noneffective rates, respectively, of 7.50, 9.10, and 9.49. The average number of days treatment for each case at these posts was, respectively, 11.88, 10.95, and 9.80.

The three posts having the lowest admission rates were Fort Warren, Fort Ontario, and Fort Worden, Wash., with rates, respectively, of 230.41, 350.71, and 352.48. The noneffective rates for Fort Warren and Fort Ontario are given in the last paragraph; that for Fort Worden was 15.67, and the average number of days for each case at that post was 16.22.

Of the recruiting depots, Fort Slocum, N. Y., had the highest noneffective rate, 56.64, and Fort McDowell, Cal., the lowest, 33.96. Jefferson Barracks, Mo., had the highest average number of days treatment for each case, 14.40, and Columbus Barracks, Ohio, the lowest, 8.85. Fort Slocum also had the highest admission rate, 2,164.28, and Jefferson Barracks the lowest, 1,140.77. The highest death rate occurred at Columbus Barracks, 18.53 per 1,000, and the lowest Fort Logan, 1.69.

The Western Division had the lowest noneffective rate, this being 20.27 per 1,000, as compared with 20.71 for the Eastern and 34.44 for the Central. The Eastern Division had the lowest admission rate, being 722.29 per 1,000 as compared with 798.63 for the Central and 859.45 for the Western. The Eastern Division also had the lowest death rate, this being 3.41 per 1,000, as compared with 3.82 for the Western Division and 5.47 for the Central. The Western Division had the lowest average number of days treatment for each case, this being 8.61 days, as compared with 10.47 for the Eastern Division and 15.74 for the Central.

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INFLUENCE OF AGE AND LENGTH OF SERVICE.

The youngest soldiers and those serving their first enlistment had, as usual, the highest admission and discharge and noneffective rates, and the death rate was highest among those 45 years of age or over having 10 years or more of service. The lowest admission rate occurred in soldiers between 45 and 50 years of age, and the lowest constantly noneffective rate in those between 35 and 40.

The following table exhibits the effects of age and length of service upon rates for disease:

TABLE No. 36.—*Influence of disease on troops serving in the United States, continental (excluding Alaska), by age and length of service, year 1911.*

	Mean strength.	Admitted.	Discharged on certificate of disability.	Died.	Constantly noneffective.	Ratio per 1,000 of mean strength.			
						Admitted.	Discharged on certificate of disability.	Died.	Constantly noneffective.
Length of service:									
Under 1 year	10,204	15,876	346	56	506.11	1,555.86	33.75	5.46	49.60
1 to 2 years	6,589	3,905	84	8	146.68	592.65	12.69	1.21	22.26
2 to 3 years	11,852	6,891	83	13	255.65	581.42	6.97	1.09	21.57
3 to 4 years	6,043	3,758	53	10	146.36	621.88	8.73	1.65	24.22
4 to 5 years	3,518	1,643	25	5	66.79	467.03	7.07	1.41	18.99
5 to 10 years	8,770	4,564	86	23	194.08	520.41	9.76	2.61	22.13
10 years and over	8,264	3,458	59	42	143.26	418.44	7.10	5.06	17.34
Total	55,240	40,095	736	157	1,458.96	725.83	13.26	2.83	26.41
Age:									
19 years and under	2,019	2,847	49	13	90.03	1,410.10	24.15	6.41	44.59
20 to 24 years	21,404	20,266	343	49	677.53	946.83	15.94	2.28	31.66
25 to 29 years	15,550	9,769	162	28	381.00	628.23	10.37	1.79	24.50
30 to 34 years	8,390	3,903	105	28	169.77	465.20	12.45	3.32	20.24
35 to 39 years	4,209	1,782	48	20	77.59	423.38	11.35	4.73	18.44
40 to 44 years	2,187	887	15	10	35.70	405.58	6.82	4.55	16.32
45 to 49 years	1,070	405	5	5	17.15	378.50	4.65	4.65	16.02
50 years and over	411	236	9	4	10.18	574.21	21.79	9.69	24.76
Total	55,240	40,095	736	157	1,458.96	725.83	13.26	2.83	26.41

INFLUENCE OF SEASON.

Excluding venereal diseases, alcoholism, and injuries, the highest admission was in January, the highest noneffective and death rate in March. The lowest admission rate occurred in October, the lowest noneffective rate in July, and the lowest death rate in August.

The following table (No. 37) shows the movement of sick by months. A study of these data for previous years shows a wide variation in the months showing the several highest and lowest rates. It can be stated, however, in general terms that all rates are highest in the first half of the year and lowest in the second half. February and March give the highest constantly noneffective rates, and July and August the lowest.

TABLE No. 37.—*Influence of season, United States, continental (excluding Alaska), year 1911.*

Month.	Mean strength.	Ratio per 1,000 of mean strength.								Prevailing diseases (exclusive of venereal diseases, etc.).
		All causes.					Exclusive of venereal diseases, injuries, alcoholism, and vaccinia.			
		Admissions.		Deaths.	Noneffective.					
		Total.	Hospital.		Total.	Hospital.	Admissions.	Death.	Noneffective.	
January	55,304	88.85	75.33	0.42	35.11	32.32	57.46	0.22	20.08	Tonsillitis, 489; influenza, 350; acute bronchitis, 304.
February	54,782	80.96	66.01	.44	37.34	34.13	51.79	.32	22.33	Tonsillitis, 432; influenza. 258; acute bronchitis, 244.
March	55,203	83.98	56.12	.58	34.66	31.03	54.53	.43	20.50	Tonsillitis, 399; acute bronchitis, 265; influenza, 218.
April	55,156	80.08	47.68	.42	33.46	29.48	51.71	.22	19.79	Tonsillitis, 299; diarrhea and enteritis, 280; acute bronchitis, 168.
May	56,122	73.06	39.31	.53	31.48	27.41	43.25	.32	17.41	Tonsillitis, 247; diarrhea and enteritis, 179; dyspepsia, 131.
June	55,345	66.85	38.90	.36	30.77	27.12	36.12	.16	16.14	Diarrhea and enteritis, 184; tonsillitis, 138; dyspepsia, 103.
July	55,511	71.81	51.86	.47	28.76	25.82	36.66	.18	14.08	Tonsillitis, 138; diarrhea and enteritis, 132; furuncle, 115.
August	56,951	68.06	51.48	.21	28.86	26.19	35.01	.09	14.11	Diarrhea and enteritis, 205; tonsillitis, 146; malarial fever, 112.
September	54,962	68.79	51.58	.33	29.90	26.84	36.52	.11	15.36	Malarial fever, 163; diarrhea and enteritis, 148; tonsillitis, 139.
October	55,260	65.94	50.04	.40	28.47	25.70	34.99	.22	14.65	Tonsillitis, 156; diarrhea and enteritis, 137; malarial fever, 132.
November	54,144	68.61	55.06	.33	29.34	27.02	35.08	.20	14.77	Tonsillitis, 205; acute bronchitis, 126.
December	54,138	70.89	60.01	.26	29.14	27.03	39.31	.17	15.22	Tonsillitis, 368; acute bronchitis, 111.
Total	55,240	887.80	642.83	4.72	31.40	28.30	513.18	2.63	17.00	Tonsillitis, 3,156; acute bronchitis, 1,762; diarrhea and enteritis, 1,549; influenza, 1,179; dyspepsia, 1,029; furuncle, 930; malarial fever, 811.

INFLUENCE OF RACE.

The white troops had higher rates than the colored for noneffective, admissions, and discharges, being 31.68, 895.02, and 15.04, as compared with 26.38, 758.95, and 14.32 per 1,000. The death rate for colored troops was, however, higher, being 6.82, as compared with 4.60. These comparisons were also true for 1910.

For venereal diseases the rate for the white troops was 165.03 and for the colored 142.85; for alcoholism the rate for the white troops was 20.97 and for the colored 8.52; for tuberculosis (all kinds) the rate for the colored was 5.46 and for the white 3.80; for bronchitis the rate for the colored was 40.92 and for the white 34.03; for diarrhea and enteritis the rate for the white was 28.31 and for the colored

23.18; and for rheumatism (all kinds) the rate for colored was 13.30 and for the white 10.30. The relative prevalence of the other several diseases in the two races are shown in tables Nos. 68 and 69 at the end of the report.

SANITATION, UNITED STATES.

The sanitary conditions throughout the Army for the year were very good. A review of the monthly sanitary reports for the year shows very few sanitary defects of any importance and when the attention of high authorities was called to such defects as existed by these reports, they were usually corrected with promptness, except in cases where large appropriations of money were required.

When the divisions were established July 1, 1911, chief surgeons being no longer required or authorized at the department headquarters, this office recommended that a medical officer be assigned to each division headquarters in addition to the chief surgeon as sanitary inspector. It was recognized that it would be an impossibility for the chief surgeon to attend to the multifarious duties of his office at headquarters and also make the necessary sanitary inspections of the posts in the division. The establishment of this office of sanitary inspector is a matter of great importance to the sanitation of the Army. It is very necessary for the efficiency of the medical department and for the sanitation of the various posts that a medical inspector should visit each post as a routine once a year, and more frequently if the necessity arises.

Another sanitary measure that has been gradually developing for several years, proved of great value during the year of 1911. This measure used throughout the Eastern and Central Divisions and a part of the Western Division, is a physical inspection of the enlisted personnel made twice a month. General Orders No. 17, War Department, May 31, 1912, now requires this inspection to be made at each post throughout the Army twice a month by a medical officer.

> Commanding officers will require a medical officer, accompanied by the company or detachment commander, to make a thorough physical inspection twice in each month of all the enlisted men (except married men of good character) of each organization belonging to or attached to the command. These inspections will be made at times not known beforehand to the men and preferably immediately after a formation. The dates on which the physical inspections of the various organizations are made will be noted on the monthly sanitary reports.
>
> At these inspections a careful examination of the feet and footwear and of the condition of personal cleanliness of the men will be made, as well as careful observation for the detection of venereal diseases.

These inspections have been of great value, not only for the detection of venereal diseases requiring treatment, but also for the examination of the teeth, the inspection of the body and clothing for evidence of personal uncleanliness and vermin, and for the observation of the feet and footwear.

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SANITATION IN THE CAMPS ON THE MEXICAN BORDER.

Mention was made in the last report from this office of the division camp at San Antonio, Tex., and the camp of the separate brigades at Galveston, Tex., and San Diego, Cal., and the excellent sanitary

record of these camps. Mention will be found under the head of special diseases, typhoid fever, of the occurence of that disease there. Since these camps were discontinued last summer there have been several for various sized bodies of troops, at times several regiments in all, in camp on the border. The same general scheme of sanitation which was found so successful in the camp at San Antonio was followed with great success. Latrines with modified Havard boxes burned out daily with crude oil and straw have been used for the disposal of human excreta, the kitchen waste has been burned on an improvised rock-pile incinerator at each kitchen, and the manure and other refuse burned on improvised rock-pile incinerators. The result has been most satisfactory.

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SERVICE CAP AND CAMPAIGN HAT.

The service cap the use of which is obligatory now at posts in this country has been reported upon adversely by several surgeons. It is very apparent that this cap does not afford the desired protection to wearer in hot climates. The cap is so constructed that the top of the crown fits directly on the head at one place and the visor affords practically no protection to the eyes and face. In consequence of the reports above referred to and the recommendation of this office, commanding officers at a number of posts on the southern border have been authorized to permit the use of the campaign hat instead of the cap in very hot weather.

SHOES.

The Army is now fully convinced of the necessity of having military shoes made on a correct last and properly fitted. The lasts and styles of the shoes have been changed from time to time, and each time the change has apparently resulted in a better shoe being adopted. The tan and black garrison shoes as at present issued have been found very satisfactory on the whole. Not so much can be said of the present marching shoe. Numerous adverse reports have been received from various surgeons. The majority of them report (*a*) that the toe of the shoe is too low, (*b*) that the toe of the shoe does not properly protect the toes of the foot, (*c*) that the width of the shoe is too great for the length, and hence if a shoe is long enough for the foot it is too wide, (*d*) and the instep is too low. This question has been under consideration for several months by a board at Fort Leavenworth, with Maj. E. L. Munson, Medical Corps, as president. A great many radiographs have been made of feet with shoes of various patterns and without shoes. These radiographs show that practically the feet of all adults are deformed from wearing shoes made on an improper last. The board suggested that a number of shoes be made on a set of lasts recommended by them, and that a practical test be made of these shoes under the supervision of the board. This was done. A command of 379 men were properly fitted with these shoes, under the supervision of the board, and went out on a practice march of 117 miles, occupying 9 days. Careful notes were kept and examinations made both by inspection and X ray. It is believed that a satisfactory field shoe has been devised

as the result of the work of this board. The same last will be used for all shoes, both garrison and field, black and tan.

The board calls attention to the fact that the shoe can not be fairly considered by itself alone, since its actual utility depends upon the tripod of construction, supply, and fit. If any leg of this tripod fails the whole structure falls to the ground and the shoe is unsatisfactory. The report is of great and permanent value in that it not only discusses in a thorough and scientific manner the qualities which are essential for a military shoe, but that it also demonstrates that many soldiers do not select shoes that fit them, and that for this reason trouble may occur with the very best shoe. Their recommendations with regard to fitting are very practicable, specifying the method of fit, and providing that the fitting of shoes shall be personally supervised by an officer. They also made the wise suggestion that officers should be given a course of instruction in care of the feet, including the fitting of shoes. The board calls attention to the fact that the Quartermaster's Department, not realizing the importance of the matter, has not, heretofore, furnished to each post a sufficient supply of shoes of each size and width to enable company officers to fit their men. This leg of the tripod, as pointed out by the board, is as essential as any other.

Capt. Weed, Medical Corps, in a special report on feet and footwear, points out that the fitting of the socks is a matter of great importance. A pair of socks of improper size may cause almost as much injury as shoes of improper size.

The surgeon at Jefferson Barracks, in November, 1911, stated that only one pair of shoes was issued to each recruit upon enlistment, which were used on all occasions and in all sorts of weather while the recruit remained at the depot. A change of shoes was, in his opinion, as necessary in wet weather as a change of socks. Upon his recommendation, orders were issued that each recruit be furnished with two pairs of shoes.

FOOD.

The food supply and its preparation have been reported as almost uniformly satisfactory.

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ALASKA.

The mean enlisted strength of the troops serving in Alaska during the past year was 1,119 as compared with 1,081 in 1910. This force consisted of Infantry, Signal Corps, and Hospital Corps, all white. Alaska still maintains its position as being by far the healthiest region where the Army is stationed. The noneffective, admission, and discharge rates were lower than for 1910, being 13.15, 418.23, and 4.47 per 1,000, respectively, as compared with 17.01, 452.36, and 7.96. These rates for the United States for 1911 were 31.40, 887.80, and 15. The average number of days' treatment for each case was 11.47. In the United States it was 12.91. The death rate, 6.26, was much higher than 2.65, the rate for 1910. There were 7 deaths. There were 9 invalided home, the same number as in 1910. Two of

these were for tuberculosis, and one each for chronic alcoholism, insanity, neuralgia, inguinal hernia, chronic nephritis, gunshot wound, and frostbite.

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The principal causes of admission for disease were venereal diseases 34.83, alcoholism 29.49, bronchitis 20.55, pneumonia (lobar) 4.47, and broncho-pneumonia 3.57. The rates for these diseases for the United States were respectively 163.85, 20.31, 34.40, 1.97, and 0.34. The infectious diseases were noticeably absent, no case being reported of typhoid fever, smallpox, scarlet fever, or diphtheria, and only two of measles, and two of pulmonary tuberculosis.

PORTO RICO.

There are in Porto Rico two military posts, San Juan at the capital, and Henry Barracks in the interior, both garrisoned by the Porto Rican Regiment. The mean enlisted strength for 1911 was 563. The enlisted strength of this regiment is recruited from native Porto Ricans, the officers being in part Americans and in part Porto Ricans.

TABLE No. 39.—*Movement of sick in Porto Rico, year 1911.*

	Years.	From all causes.		Excluding injuries, venereal diseases, vaccinia, and alcoholism.	
		Total.	In hospital.	Total.	In hospital.
Ratio per 1,000 of mean strength:					
Admissions to sick report	1911	1,050.00	987.93	770.69	.....
	1910	952.62	895.00	656.51	.....
Discharges on certificate of disability	1911	8.62	.....	6.90	.....
	1910	15.23	.....	5.08	.....
Deaths	1911	6.90	.....	3.45	.....
	1910	.....	.....	.....	.....
Total losses	1911	15.52	.....	10.35	.....
	1910	15.23	.....	5.08	.....
Noneffective	1911	29.78	28.55	16.58	15.90
	1910	31.98	29.88	17.66	16.16
Average number of days lost:					
For each soldier	1911	10.87	10.42	6.05	5.80
	1910	11.43	10.72	6.36	5.82
For each case	1911	10.35	10.55	7.85	.....
	1910	12.20	12.16	9.81	.....

The noneffective and discharge rates were both lower than for 1910. The admission rate and the rate for deaths and for total losses were, however, higher. The lower noneffective rate with a higher admission rate was due to the smaller average number of days lost for each case admitted.

Table No. 40 gives the rates for the prevailing diseases, from which it will be seen that there is a marked increase in the rates for venereal diseases, malarial fevers, and ankylostomiasis. There is a decrease for filariasis and typhoid fever.

TABLE No. 40.—*Diseases of Porto Rican troops, admission rates per 1,000 of mean strength.*

	1911	1910	1909	1908
Venereal diseases	191.38	162.44	250.44	242.91
Chancroid and results	101.72	55.84	89.95	60.28
Gonorrhea and results	60.34	74.45	126.98	143.62
Syphilis and results	29.31	32.15	33.51	39.01
Malaria	131.03	74.45	179.89	219.86
Ankylostomiasis	96.55	76.14	8.82	14.18
Dyspepsia	93.10	16.92	49.38	62.06
Influenza	46.55	23.69	82.89	83.33
Furuncle	44.83	57.53	109.35	78.01
Filariasis	20.69	28.76	22.93	3.55
Dysentery	18.97	22.00	14.11	15.96
Bronchitis, acute and chronic	15.52	20.30	29.98	19.50
Smallpox	6.90	1.69	3.53	7.09
Insanity	3.45	3.38	3.53	1.77
Rheumatism, acute articular	3.45	1.69	8.82	5.32
Typhoid fever	1.72	5.08	5.29	5.32
Tuberculosis	1.72	1.69	3.53	1.77
Measles		1.69	17.64	19.50

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HAWAII.

Only one island of the Hawaiian group is garrisoned, namely, Oahu, on which is situated the city of Honolulu. The mean enlisted strength of the garrison during the year was 2,014 as compared with 1,220 in 1910. In spite of its salubrious and temperate climate and the absence of the more serious epidemic diseases, the noneffective, admission, and discharge rates were higher than for the United States. The average number of days' treatment for each case was 15.04 days, as compared with 12.91 for the United States. The death rate was, however, lower. The noneffective and admission rates (enlisted strength) were 44.52 and 1,080.44 per 1,000, as compared with 49.88 and 1,009.84 for 1910. The discharge and death rates were 13.90 and 2.98, as compared with 17.14 and 2.45 for 1910. It will thus be seen that the noneffective and discharge rates were lower in 1911 than in 1910, while the admission and death rates were a little higher. Fifty-three cases were invalided home; of these 11 were for venereal diseases; four each for tuberculosis and diseases of the nervous system; three each for insanity, organic disease of the heart, and muscular rheumatism; 2 each for cataract and secondary result of injury, and 1 each for 21 other causes. For detailed information in regard to the movements of the sick see Table No. 70 on page 236.

There are at present four posts garrisoned. These are Schofield Barracks, Fort Shafter, Fort Ruger, and Fort De Russy. At Schofield Barracks where a regiment of Cavalry, two battalions of Infantry, and three batteries of Field Artillery are stationed, the barracks and quarters are temporary wooden structures. In the Cavalry cantonment both hot and cold showers are provided, but in the Infantry and Artillery only cold. With a mean minimum temperature in December, January, February, March, and April of less than 60° F. and as low as 51°, it is evident that heated water should be furnished to all for bathing purposes. McCall and Conley incinerators have been used for the enlisted force in barracks and dry-earth closets for officers' quarters and all others.

Considerable difficulty has been experienced in the disposal of the sewage. At first cesspools were used with provisions for draining the overflow into a neighboring gulch. These cesspools, however, proved to be very unsatisfactory. The drains did not work properly and the surrounding ground was flooded. In addition the odor from them was quite marked and very annoying. Steps have been taken, however, to discontinue the use of the cesspools and fill them up. The sewage is conveyed by the drains to within about 2,000 feet from the gulch into which it is deposited through an open ditch. The chief surgeon states that the piping should be continued to the brow of the gulch as an open ditch will prove a breeding place for mosquitoes.

An irrigation ditch passes through the post. The surgeon recommends the filling of this ditch if the terms under which the grounds are held will permit. The ditch in question belongs to a neighboring sugar plantation.

Fort Shafter which is garrisoned by one battalion of Infantry, is the old post in the islands. The sanitary arrangements there are good and are similar to those in the majority of posts in the United States. The buildings and sanitary arrangements at the other two posts are still temporary in character but are satisfactory. In the early part of 1911 cholera appeared in epidemic form in Honolulu, and one case of yellow fever developed on November 1. The origin of this case is of some epidemiological interest. On October 21, 1911, the Japanese steamer *Hongkong Maru* arrived from Manzanillo, Mexico, with a convalescent case of yellow fever on board. She was placed in quarantine and a native watchman was placed on board of her. This watchman was doubtless bitten by an infected mosquito and was taken sick at his home, and the nature of the case not suspected until there had been abundant opportunity for the infection of mosquitoes. Energetic mosquito destruction was, however, initiated and no secondary cases developed. No case of cholera or yellow fever occurred in the military population.

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PHILIPPINE ISLANDS, AMERICAN TROOPS.

The improvement in the health of the American troops in the Philippines noted in the annual reports of years past continues to be maintained. As shown in Table No. 6, the admission rate for disease and the constantly noneffective rate were better for 1911 than for 1910, which was in turn better than for any preceding year. The death rate was, for disease, much lower than in 1910, but that for external causes was much higher, making the total rate higher, it being 5.30 in 1911 and 5.19 in 1910. Among the deaths from external causes there were 17 deaths from wounds, 5 for fractures, exclusive of gunshot, and 8 for drowning. Of the deaths from wounds, there were 5 killed in action.

The mean strength of the American troops was 12,454, not including a force of native troops, the Filipino Scouts, with a mean strength of 5,266, for whom medical statistics will be given separately on page 122.

During the year there were 15,172 admissions, with a mean strength of 12,454, making an admission rate of 1 218.24, which was lower than the rate for 1910, which was 1,242.65. Of the command, there was an average constantly noneffective of 537.37, making a non-

effective rate of 43.15 per 1,000, which was lower than the rate of 45.45 for 1910. Both the admission and constantly noneffective rates for the American troops continue to be much higher than that for the Filipino troops, the causes for which are discussed on page 133. A total for all troops, American and Filipino, of 242,532 days was lost in quarters and hospital. Of this number, 147,374 were from causes incurred in the line of duty and 95,158 not in line of duty.

The most important diseases showing a decrease are, with their rates, typhoid fever, 0.88; undetermined fevers, 6.74; malarial fevers, 75.56; dysenteries, 14.37; tuberculosis (all), 3.77; and diarrhea and enteritis, 46.09, the rates for 1910 being, respectively, 2.53, 10.75, 86.34, 19.39, 5.46, and 74.86. There was a slight increase for insanity, the rate being 2.01 per 1,000 in 1911 and 1.87 in 1910. There was a decided increase for venereal diseases, the rate being 305.12 in 1911 and 275.64 in 1910, and for dengue the rate being 115.95 in 1911 and 82.84 in 1910.

The diseases causing the highest noneffective rates were venereal diseases, 16.63 (17.72 in 1910); dengue, 1.99 (1.53 in 1910); malarial fevers, 1.78 (2.32 in 1910) diarrhea and enteritis, 0.92 (1.38 in 1910); and dysenteries, 0.90 (1.26 in 1910). The principal causes of deaths were (absolute numbers), gunshot wounds 9, other wounds 8, drowning 8, fractures (exclusive of gunshot wounds) 5, organic disease of the heart 5, and acute poisonings 3. There were 5 men killed in action, 9 suicides, 5 homicides, and 23 accidental deaths.

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PHILIPPINE SCOUTS.

The following table shows the amount of sick for the year:

TABLE No. 51.—*Movement of sick, Philippine Scouts, year 1911.*

	From all causes.		Excluding injuries, venereal diseases, vaccinia, and alcoholism.	
	Total.	In hospital.	Total.	In hospital.
Ratio per 1,000 of mean strength:				
Admissions to sick report	744.78	647.36	606.91	.....
Discharges on certificate of disability	4.94	.....	4.37	.....
Deaths	4.56	.....	3.23	.....
Total losses	9.50	.....	7.60	.....
Noneffective	19.86	18.12	14.05	12.86
Average number of days lost:				
For each soldier	7.25	6.61	5.13	4.69
For each case	9.73	10.22	8.45	.....

The continued absence of beriberi from among the scouts, a disease which in 1909 caused 41 per cent of the total loss, is a gratifying triumph of preventive medicine. This is fully described under special diseases and is illustrated by charts.

The admission rate is less than for the preceding year, being 744.78 as compared with 876.10. The total loss is also lower, being 9.5, as compared with 11.13 for 1910, and with 21.84 for 1909. The noneffective rate is lower than for last year, being 19.86 as compared

with 26.01 for 1910 and 35.11 for 1909. In the total losses the death rate was higher, being 4.56 as compared with 4.34, but the discharge rate was lower being 4.94 as compared with 6.79. The admission rate for malarial fever is 242.12 as compared with 243.47; dysentery, 7.79 as compared with 10.01; venereal diseases, 58.11 as compared with 62.05; diarrhea and enteritis, 20.89 as compared with 29.84; beriberi, 0.57 as compared with 11 in 1910 and 103.93 in 1909; Asiatic cholera, .00 as compared with 0.20; and tuberculosis (all), 3.23 as compared with 3.34. The rate of deaths from disease was lower, being 3.23 as compared with 3.58, but the rate for external causes was higher, being 1.33 as compared with 0.75.

TABLE No. 52.—*Causes of death among Philippine Scouts, year 1911.*

Causes of death.	Number of deaths.	Ratio per 1,000 of—	
		Mean strength.	Total deaths.
DISEASES.			
Malarial fever (estivoautumnal, 2; pernicious cachexia, 1)	3	0.57	176.47
Organic heart disease	3	.57	176.47
Tuberculosis (of the lungs, 1; of other organs, 1)	2	.38	117.65
Pneumonia (lobar)	2	.38	117.65
Acute cerebrospinal meningitis	1	.19	58.82
Beriberi	1	.19	58.82
Sprue	1	.19	58.82
Hepatic abscess	1	.19	58.82
Cholecystitis, acute	1	.19	58.82
Appendicitis	1	.19	58.82
Carbuncle	1	.19	58.82
Total	17	3.23	1,000.00
EXTERNAL CAUSES			
Gunshot wounds (accident, 2; suicide, 2; homicide, 1)	5	.95	714.29
Accidental drowning	2	0.38	285.71
Total	7	1.33	1,000.00
Total diseases	17	3.23	708.33
Total external causes	7	1.33	291.67
Grand total	24	4.56	1,000.00

The principal differences from the preceding year were 2 deaths from tuberculosis as compared with 5; organic heart disease 3 as compared with none; beriberi 1 as compared with 2. There were 3 deaths from malarial fevers as in the preceding year. The death rate for diseases was 3.23 as compared with 3.58 for 1910, the actual number being 17 as compared with 19. There were 7 deaths from external causes as compared with 4 in 1910. This makes the total number of deaths 24 as compared with 23, and a rate per 1,000 of 4.56 as compared with 4.34.

TABLE NO. 53.—*Causes of discharge for disability, Philippine Scouts, year 1911.*

Causes of discharge.	Number discharged.	Percentage of discharges for disease.	In line of duty.	Not in line of duty.	
				Contracted before enlistment.	Contracted after enlistment.
DISEASES.					
Pulmonary tuberculosis	11	47.83	11	.....	.....
Insanity	5	21.74	1	4	.....
Leprosy	2	8.70	.....	2	.....
Optic atrophy	1	4.35	1	.....	.....
Neuritis, retrobulbar	1	4.35	.....	1	.....
Filariasis	1	4.35	.....	1	.....
Flat feet, congenital	1	4.35	.....	1	.....
Feeble mindedness, congenital	1	4.35	.....	1	.....
Total	23	100.00	13	10	.....
EXTERNAL CAUSES.					
Fracture (accidental)	1	33.33	1	.....	.....
Lacerated wound (accidental)	1	33.33	.....	.....	1
Penetrating wound, elbow	1	33.33	1	.....	.....
Total	3	100.00	2	.....	1
Total diseases	23	88.46	13	10	.....
Total external causes	3	11.54	2	.....	1
Grand total	26	100.00	15	10	1

The most notable differences in this table from the preceding year are 11 discharges for tuberculosis as compared with 15 in 1910; 5 for insanity as compared with 1; 2 for leprosy as compared with none: and none for nephritis as compared with 4. There was not a single discharge for beriberi in 1911, as compared with 2 in 1910, and 33 in 1909. The total number discharged for diseases was 23 in 1911, as compared with 32 for 1910, the rate being 4.37 as compared with 6.04. The total number of discharges was 26 as compared with 36, the rate being 4.94 as compared with 6.79.

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PREVALENCE OF DISEASES, BY RACES, IN THE PHILLIPPINES.

In making this comparison, it is to be borne in mind that the native troops were serving in their own country under conditions natural to them, but inimical to our troops.

The admissions and constant noneffective rates were much lower for the Filipino than for American troops serving in the Philippines, the admission rate for American troops being 1,218.24, and for Filipino 744.78. The noneffective rate for the American troops was 43.15, and for the Filipino 19.86. The death and discharge rates for the Filipino troops were also lower than for American, the death rate for the former being 4.56, and for the latter 5.30, while the discharge rate for the former was 4.94, and for the latter 11.64.

TABLE No. 62.—*Important diseases by races, Philippine Islands.*

Diseases.	Admission rates.		Diseases.	Admission rates.	
	American troops, white only.	Filipino troops.		American troops, white only.	Filipino troops.
Venereal diseases	305.12	58.11	Hemorrhoids	7.07	0.57
Dengue	115.95	15.38	Tuberculosis	3.77	3.23
Diarrhea and enteritis	46.09	20.89	Malaria	75.56	242.12
Furunculosis	43.68	22.60	Intestinal parasites	5.86	41.40
Alcoholism	28.50	.76	Bronchitis, acute and chronic	21.20	21.65
Dyspepsia	23.37	16.90	Dhobie, itch	10.12	18.04
Tonsillitis	21.04	2.85	Conjunctivitis	5.94	7.22
Muscular rheumatism and myalgia	15.98	5.51	Typhoid fever	.96	2.28
Dysentery	14.37	7.79	Pneumonia	.40	1.52
Appendicitis	7.95	.57	Influenza	.32	.95
Articular rheumatism, acute and chronic	7.31	4.56	Beriberi		.57

SANITATION IN THE PHILIPPINE ISLANDS.

The chief surgeon reports that sanitation and general sanitary conditions throughout the division were good during the year, and that little sickness at posts could be attributed to unhygienic conditions. A certain amount of sickness has, however, he states resulted from field service.

In his December sanitary report, the surgeon at Augur Barracks, Jolo, remarks as follows:

> Malarial and dengue fevers and amebic dysentery have been the prevailing diseases during the month. Owing to the fact that the troops were in the field, and often all night in trenches and on outposts, preventive measures against mosquito-borne diseases were practically impossible. Mosquito bars were used when possible, and the quinine prophylatic was administered. In marching for several hours under the tropical sun the men drank unboiled water in spite of regulations against it. Boiled water was supplied in camp and on starting on the march.

The Forty-third Company of Philippine Scouts arrived at Camp Ward Cheney, Cavite, P. I., September 29, from field service in Davao, P. I. During the month of October 39 men out of 98, or 40 per cent, were found to have malarial infections. Thirteen cases were found in the Forty-eighth Company, Philippine Scouts, at the same post, coming there from field duty in Davao.

The surgeon at Cotabato, Mindanao, P. I., reports in October that 4 men had contracted typhoid fever while on field service in the Cotabato Valley. The infection was contracted six weeks after the men left the post.

WATER SUPPLY.

The water supply at posts is obtained from various sources; from rivers and lakes; from shallow and deep wells; and at several of the scout posts, from stored rain water. A few of the posts are now supplied with artesian wells, from which it is considered safe to use the water for drinking and cooking without sterilization. At a vast majority of the larger posts, however, the water for drinking and cooking is distilled and stored in a tank. From this tank it is drawn daily into a water-tank wagon and delivered to the various barracks

and quarters in galvanized-iron water cans. The storage tank, the water-tank wagons, and the water cans are steamed out at stated intervals. In accordance with a division order a bacteriological examination is made twice monthly. On account of the danger that water may be contaminated during the delivery, most of the post surgeons recommend that all water for drinking purposes be boiled.

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BOARD FOR THE STUDY OF TROPICAL DISEASES.

During the year 1911 this board was composed of Maj. Weston P. Chamberlain, Capt. E. B. Vedder, and Capt. Horace D. Bloombergh, who was relieved February 14, 1911, by Lieut. J. R. Barber. In addition to the regular quarterly reports, several special reports have been furnished since the publication of the last annual report.

BERIBERI.

In the preceding annual report some account was given of the practical elimination of beriberi from the Philippine Scouts as a result of change in diet issued in accordance with the recommendation of the board. The important changes were the addition of a legume, the reduction of the amount of rice issued, and the issue of an undermilled instead of a highly polished rice. Under the head of special diseases among the Philippine Scouts on page 130 will be found a statement as to the nearly complete disappearance of this disease.

In the last report there was also a discussion of the relation of highly milled rice to beriberi and of a number of experiments performed on fowls by the board to establish the relationship between highly milled rice and the occurrence of polyneuritis gallinarum. It was pointed out that among oriental peoples, who are accustomed to consume a large amount of rice, beriberi will occur if the highly polished or highly milled rice is used, and that this disease disappears or does not occur when the undermilled variety is used. Further than this it was shown that fowls fed on highly milled rice developed a polyneuritis in the great majority of cases. It was then known that the salts of phosphorus and potassium in the rice do not of themselves prevent beriberi, but it was believed that the amount of these salts present could be taken as an index of the beriberi preventive quality of the rice. Some samples of undermilled rice have since been examined which retained almost the entire pericarp and which undoubtedly would prevent beriberi, and yet these rices on analysis were shown to contain a percentage of phosphorus pentoxide, as low or lower than that contained in some specimens of highly polished rice, which were analyzed by the same chemist. The board is of the opinion that the character of the soil may affect very materially the phosphorus contents of rices as it does in the case of other grain. The board is further of the opinion that the amount of amido-nitrogen may be as reliable as an index as the salts of phosphorus and potassium.

During the year a large number of experiments were made on fowls to find if possible the exact food element or compound present in the outer layers of rice, the removal of which causes the occurrence of

polyneuritis in fowls and beriberi in adults. In a report furnished in August, 1911, the following conclusions were reached:

We have made some progress in the identification of the neuritis-preventing substance contained in the extract of rice polishings prepared by the method described in our first paper. Of 1.34 per cent total solids contained in this extract, 0.03 per cent was ash. This we believe to be negligible since it consists entirely of inorganic constituents, chiefly of calcium, magnesium, and potassium which have been tried and found wanting. Nitrogenous matter comprises 0.04 per cent of the total solids. Of this only 0.02 per cent was present in the diffusate, which has been shown to contain the neuritis-preventing principle, and the remaining 0.02 per cent can be eliminated because it remained in the dialysate which failed to prevent neuritis. The 0.88 per cent sucrose is of no importance. Combining these unimportant substances and subtracting them from the 1.34 per cent of total solids, we find that there is only 0.4 per cent remaining. The neuritis-preventing principle must therefore be sought for in this 0.4 per cent of solid matter and must be a substance that is dialyzable, that is soluble in water, in 95 per cent alcohol, and 0.3 per cent hydrochloric acid, which is easily decomposed by heat and which possesses a strong affinity for bone black. The same substance or a similar substance is also contained in a decoction of ordinary white beans. Bodies corresponding to this description are found among the decomposition products of the proteids. It appears to us, therefore, that we have obtained sufficient information with regard to the nature of this body to attempt to identify it by the direct methods of chemical analysis.

The conclusions in a report in January, 1912, were as follows:

(1) These experiments all substantiate the theory that polyneuritis gallinarum and beriberi are caused by the deficiency of some as yet unknown substance in the food. We have shown previously that this substance is not phosphorus. (2) Kohlbrugge's theory that beriberi is caused by an acid intoxication, which is due to the fermentation of rice by various saprophytic bacteria contained in the kernel, must be regarded as untenable. (3) To the list of substances which we have shown in previous papers to be of no importance in preventing neuritis of fowls there may now be added the following: Nitrogenous compounds, such as arginin, histidin, asparagin, and various amino-acids; lipoids of the lecithin group and cholin; extract of onions. (4) The neuritis-preventing principle is insoluble in ether. (5) The neuritis-preventing principle is absorbed by animal charcoal and the filtrate through the charcoal will not prevent neuritis. After absorption the active principle can not be removed from the charcoal by maceration with water, absolute alcohol, or ether. (6) The administration of large quantities of sodium chloride failed to produce edema in fowls suffering from polyneuritis. (7) Five cubic centimeters of our extract (equivalent to 5 grams of rice polishings) is sufficient to protect fowls subsisting upon polished rice. Two and one-half cubic centimeters (equivalent to 2.5 grams of polishings) is insufficient to confer complete protection from polyneuritis.

INFANTILE BERIBERI.

There is a very common disease in the Philippines among the infants, which several observers have considered to be infantile beriberi. It occurred to the board that this infantile beriberi could be cured by the simplified extract of rice polishings, which had been found to prevent polyneuritis when administered to fowls subsisting on highly milled rice. They determined to treat cases of this kind by administering the extract of rice polishing directly to the infant while permitting it to continue nursing its mother. With the aid of several civilian practitioners the Board was able to see and treat successfully 15 infants. The diagnosis in these cases has not been made by a single physician, but each patient has been seen by several physicians and the diagnosis confirmed. The mothers of all these infants had symptoms of incipient or marked beriberi. The children had all been breast fed. With one exception all were under three months of age. The disease usually has been ushered in with vomiting, which after a few days was followed by great restlessness, sleeplessness, continual whining, and later by dyspnea, increased cardiac

action, and edema of the face and legs. Later still oliguria and aphonia developed in many of the patients. About one-half of the cases treated have had aphonia, and some appeared to be at the point of death. On the other hand, several cases were milder. The infants were all given 20 drops of the extract of rice polishings every two hours while awake, and the results were truly marvelous. Improvement is immediate. The vomiting stops in 24 or 36 hours. The child, who has not passed any urine for several days, urinates five or six times freely. The edema disappears in the course of a few days.

Usually on the first night after treatment is begun the infant falls into a deep sleep, although it may have been practically sleepless for several weeks. The dyspnea and palpitation cease after two or three days. At the end of a week or in less time the patients are completely cured, with the exception of the aphonia. The mother states that the baby is well and that she would be completely satisfied if only it would recover its voice. The aphonia, however, does not disappear until after about two months of treatment, when the voice usually returns quite suddenly. This is probably due to the fact that the aphonia is caused by degeneration of the pneumogastric nerves, which only slowly regenerate. It can be said that this extract is a "cure" in the true sense of the word, just as lime juice is a "cure" for scurvy, and that it acts with as great promptitude as does fruit juice in infantile scorbutus.

In conclusion the board states that—

One can hardly fail to be convinced that beriberi is due to a deficiency of some as yet unknown substance in the food and that infantile beriberi is produced in those children who receive milk from a mother suffering from such a deficiency. Otherwise how can the remarkable effects of the extract treatment be accounted for? We regard our work with infantile beriberi as the final link in the chain of evidence which has been built up from experiments on men and animals, and which proves that an improper diet, usually one consisting mainly of highly milled rice, is responsible for the development of beriberi.

OLIVE DRAB COTTON UNIFORM MATERIAL.

After a series of experiments on samples of olive drab cotton uniform material of lighter weight than the regular issue, the board decided that olive drab is not a suitable color for ordinary wear in the tropics and that if any change is made from the khaki for use in the tropics it should be in the direction of a lighter rather than a darker shade.

HELMETS OF VARYING COLORS.

At the request of Col. Hodgson, president of the helmet board, some experiments were made to determine the relative coolness of a white helmet, khaki helmet, an olive drab helmet, and a campaign hat. The average of all the observations in all four experiments was as follows: Olive drab helmet, 40.42° C.; khaki helmet, 38.38° C.; white helmet, 35.36° C.; campaign hat, 46.60° C. The table emphasizes the great importance of color in uniform material. The helmets were exactly the same except for color. The board concludes that—

The general use of white garments as a uniform, however desirable it may be from heat reflection point of view, is for many reasons almost impracticable and khaki of a shade not darker than our present issue is a very good substitute for white material. For helmets there seems to us to be no valid reason why white should not be used.

A white helmet can easily be kept looking well by the use of blanco and its appearance is not unattractive when combined with a uniform of khaki, olive drab, or any other color. If it be planned to use a helmet in actual hostilities a khaki or olive drab dressing can be provided with which to promptly change the cover of the helmet from white to a less conspicuous color. For the above reasons the board strongly recommends that any helmet which is adopted be covered with white material in place of either khaki or olive drab.

It was recently observed by the board that the French troops in Indo-China generally wore a white helmet and it is believed that the English soldiers do in India.

The importance of considering the heat absorbing quality of a uniform material is emphasized by the work reported at the recent meeting of the Philippine Islands Medical Association by Freer and Aron of the Bureau of Science. Their observations go to show that the injurious influences of tropical climates are probably due not to the short wave-length actinic or ultra-violet rays of the solar spectrum, but to the long wave-length heat rays. If, however, it is desired to give protection against a possible influence of actinic rays this can be accomplished by a black lining in the helmet. Under any circumstances the brim should have a lining of dark blue or green, as this is restful to the eyes.

THE DISADVANTAGE OF LEGGINGS FOR ROUTINE WEAR IN THE TROPICS.

The order abolishing khaki trousers and requiring the constant use of leggings with service uniform is in the opinion of the board a step in the wrong direction. Loose, well-ventilated clothing is generally considered one of the requisites for comfort and health in hot countries. In the Tropics, leggings, whether of leather or canvas, cause increased perspiration of the legs, predispose to skin disease, probably interfere to some extent with the circulation, and especially for those engaged in sedentary occupation, add one more discomfort to the many discomforts inherent in a climate where the temperature is continuously elevated. It is, the board believes, inadvisable for sanitary reasons to require their constant use for ordinary garrison duty in hot countries, for the line of the Army, and still more so for the staff departments.

THE RELATIVE RESISTANCE OF BLONDES AND BRUNETTES TO THE HARMFUL INFLUENCE OF A TROPICAL CLIMATE.

During the last two years the board has been collecting data bearing upon the influence of the tropical climate on blondes and brunettes. Exact observations were carried out at various posts in the islands on 500 blonds and an equal number of brunettes. Quarterly tests were made on the weight, temperature, pulse, respiration, blood pressure, and muscular strength. Examinations of the blood and stools were also made. The board states that—

After a study of the influences of the tropical climate, it does not seem to us by any means proved that the actinic rays of the sun are factors in tropical morbidity or that pigmentation of the skin is a protective effort on the part of nature against the chemical rays of the solar spectrum. It appears that the main causes of the troubles encountered in the Tropics are infections, continuous heat, and high humidity. Subsidiary causes are nostalgia, isolation, monotony, and the excessive use of alcohol resulting therefrom. Amelioration of these subsidiary conditions and sanitary improvements directed against the infections prevailing in the Tropics have enormously reduced the morbidity and mortality in the Philippines, in Panama, in Cuba, and elsewhere in hot countries. Affections of the nervous system, including neurasthenia and insanity, are among the diseases considered by Woodruff to be particularly liable to occur in the Tropics as a result of excessive light stimulation. He based his opinion on the figures gathered in 1901 and 1902. Subsequent statistics do not confirm the view that nervous diseases are prevalent in the Philippines. The reports of the Surgeon General of the Army for the years 1903 to 1909, inclusive, show that insanity and

nervous diseases have been no more common among the soldiers in the Philippines than among those in the United States. For the last five years, 1904 to 1909, there has been no material difference between the suicidal rate in the Philippines and that in the United States. Neurasthenia has played but a small part in the morbidity of the islands during these years. Yet the sunlight is the same as in the period from 1898 to 1902, and no special effort is made to protect the men from the sun, but the hardships, the bad sanitation, the poor food, the isolation, and the nostalgia of the earlier days have been largely remedied.

It is well known that heat and humidity in an experimental chamber and in the absence of light can produce symptoms similar to those occurring in milder degree among residents of the Tropics. We think it probable that these two factors, combined with infections, nostalgia and monotony, account for most if not all of the injurious effects seen in tropical lands. To explain the conditions met with in the Philippines there seems to be no need for invoking the aid of the actinic rays of the solar spectrum. Protection against these rays by orange-red clothing was found to be of no benefit. It is by no means proved that pigmentation per se is beneficial in the Tropics. In our investigations of blondes and brunettes the evidence was conflicting, some facts being in favor of the fair and others in favor of the dark-complexioned men. This is what would be expected if there were actually no difference between the two types as regards their resistance to tropical influences. From a consideration of all the data it appears that blondes are quite as well able as brunettes to withstand the influences of the Philippine climate for a period of two years and probably for a period of five and one-half years. In case of residence beyond the latter period we are not in a position to express an opinion based on any extensive personal observation.

THE ERYTHROCYTE COUNT AND HÆMOGLOBIN READING FOR HEALTHY WHITE SOLDIERS LIVING IN THE PHILIPPINES.

There were 1,418 erythrocyte counts and an equal number of hæmoglobin estimations made on the blood of 702 soldiers. The average red count was 5,200,000, and the average hæmoglobin, 89.6. The hæmoblogin readings and the color index are perhaps a trifle below what is to be expected for the same class of men in Europe and America, but the reduction is very slight and not sufficient to be considered evidence of a definite anemia. The average length of tropical residence in the series at the date of the last examinations was about 20 months. Investigations have shown that most of the conditions formerly diagnosed as "tropical anemias" are in reality instances of secondary anemias due to infection with parasites, notably uncinaria and plasmodia. The pallor seen in many persons living in the Tropics is due usually to a superficial ischemia, the red cell counts and hæmoglobin estimations in such cases showing no impoverishment of the blood.

THE BLOOD PRESSURE AND PULSE RATE IN THE TROPICS.

Five thousand three hundred and sixty-eight blood-pressure readings were made on 992 healthy white soldiers and 552 observations on 386 healthy adult Filipinos. There were an equal number of pulse counts made on the same individuals. The blood pressure was a little below the standard for temperate climate and was lowest during the hottest part of the year. The pulse rate for both races averaged a few beats above the usual standard in the temperate climate.

INFLUENCE OF TROPICAL RESIDENCE ON WEIGHT.

One thousand one hundred and seventy-two soldiers who had been in the Tropics for varying periods were weighed and observed from time to time. There was an average loss of weight of about 2 pounds

in a year. In the case of 200 men who had arrived in the Phillipines very shortly before the first observations were taken, the average loss of weight for a year was 3.2 pounds, or 2.3 per cent of the original weight. This suggests that the loss of weight in the Tropics may be more marked in the first year of service than at a later date.

INFLUENCE OF TROPICAL RESIDENCE ON THE BODY TEMPERATURE.

A large number of temperature readings were made on American soldiers. At no time in the readings taken was the generally recognized mean of 98.6° F. exceeded by more than 0.4° F., and at most periods the difference was 0.2° F. or less.

CAUSES OF MORBIDITY, MORTALITY, AND INVALIDING IN THE PHILIPPINES.

The board has had occasion to examine the white men who were invalided home from the Philippine Islands, and also to investigate the amount of sickness in a group of 1,000 American soldiers who had an average of two years of Philippine residence. The point of special interest is the comparatively small part played at the present time by tropical diseases in the invaliding, morbidity, and mortality of the American troops serving in the Philippines. Considering as "tropical diseases" the diarrheas, the dysenteries, the chronic enteritis, the liver abscesses, the sprue, the cholera, the malarial and undetermined fevers and dengue, the ringworm, and the insolation, we find that these combined maladies caused 26.2 per cent of the admissions, 15.2 per cent of the days lost from sickness, and 9.3 per cent of the invaliding and 12.5 per cent of the deaths. The total death rate from diseases (excluding suicides and injuries) approximate 3 per 1,000 annually. The amount of disability, death, and invaliding now being caused by dysentery and its sequelæ is astonishingly small, being about 6 per cent of the total. Venereal disease caused one-quarter of the sickness among the 1,000 soldiers, and tuberculosis caused one-quarter of the invaliding home.

Aside from tuberculosis, the mental and nervous diseases were the largest causes of invaliding, but a great number of the mental cases were found to have existed prior to enlistment, and a study of the statistics in the reports of the Surgeon General of the Army for the years 1904 to 1909, inclusive, brings out the fact that the incidence of mental and nervous diseases during that 5-year period was no higher in the Philippines than at home. The number of suicides was considerable, but the statistics from the reports of the Surgeon General for the years 1904 to 1909, inclusive, show that the death rate from suicide was not materially higher in the Philippines than at home. It may be concluded, therefore, that during the last few years there has been manifest no evidence of any serious effect on the nervous systems of our soldiers as a result of the Philippine climate. The more rapid the eradication of the idea that the climate, per se, injuriously affects the nervous system, the more rapid will be the decrease of such mild forms of neurasthenia and instability as are due largely to a preconceived dread of the effects of Philippine residence. It seems that there is strong evidence in favor of the assumption that most of the morbidity, which formerly occurred as a result of residence in the Tropics, was due not to the climate per se, but to the infections which, in the light of present knowledge, can almost entirely be avoided by good sanitation.

SKIN DISEASES AMONG THE FILIPINOS IN MANILA.

During more than two years members of the board have had charge of a dermatological clinic in Manila. The patients belonged to the poorer classes, and for the most part lived in Manila. The

number treated was 532; of this number 11 were due to blastomycotic infections; 209 to tinea infections, 111 bacterial, 51 higher animal parasites, and there were 150 classed as general skin diseases. Among the most striking cases seen recently were those patients presenting areas lighter in color than the normal skin. Other authors have called attention to the fact that tinea versicolor in dark skinned natives manifests itself by white or fawn colored areas. This fact does not seem to be universally recognized. Several cases have been encountered where no suspicion of the true nature of the disease had been entertained by the attendant. In all of these patients the microsporon furfur was easily demonstrated in the light colored areas after macerating the scales in a 10 per cent solution of potassium hydrate.

SPIROCHAETES AND FUSIFORM BACILLI IN LESIONS OF THE THROAT, MOUTH, LUNGS, AND INTEGUMENT.

During the last quarter of 1911, the observations were completed that had been in progress for two years to determine the frequency of occurrence in the Philippines of the so-called "Vincent's angina." These organisms were found associated in a great variety of lesions in the mouth and throat. Of 106 patients examined, 53 per cent showed the associated parasites in greater or less number, and 32 per cent had them present as the preponderating organism. In some of the throat and mouth ulcers in which the spirochaetes and fusiform bacilli were found, the lesions were undoubtedly due to syphilis. In one case the lesion was probably a carcinoma. Other observers have found the organisms associated with the Klebs-Loeffler bacillus. In view of these observations, it is the opinion of the board that the finding of fusiform bacilli and spirochaetes in smears from a throat lesion does not justify one in resting content with a diagnosis of "Vincent's angina." Experience shows that syphilis, diphtheria, carcinoma (and very probably other etiological factors) must be carefully ruled out. It is still an open question whether the associated fusiform bacilli and spirochaetes are ever causative of the multiform lesions in which they are so often found to be present.

TYPHOID FEVER IN THE PHILIPPINES.

The board has collected additional evidence that typhoid fever is endemic in the Philippine Islands.

THE VARIABLE RELATION BETWEEN THE CLUMPING AND THE STOPPAGE OF MOTILITY IN THE WIDAL REACTION.

A series of comparative microscopic and macroscopic agglutination tests with the bacillus typhosus have been made.

It is impossible to draw full conclusions from these sets of observations. One may, however, remark upon the general close agreement between the macroscopic results and the microscopic indications shown by stoppage of motility. However, in one case the reaction by the two methods gave diverse results. In general results would appear to indicate that the substance ordinarily concerned in the Widal reaction may be an agglutin acting on the flagella, and this seems especially likely to be true for sera from inoculated subjects. The question as to whether there are two agglutinating substances, one acting on the bodies and the other on the flagella of bacteria, has been discussed by Smith and Reagh.

It has been the rule of the board, in making microscopic agglutinations, to regard stoppage of motility as the most important element in the reaction. A serum that causes clumping without stopping the progressive motility of the bacilli, or the dragging about of the clumps, has always been ruled as negative. One that stopped motility without producing any clumps in one hour would heretofore have given rise to much uncertainty. This latter condition has been found only once in serum from typhoid suspects, or from patients suffering from typhoid fever, and in this instance the serum gave a negative microscopic reaction. Stoppage of motility without clumping has been met with in several cases of vaccinated persons and inoculated rabbits. In any event, it is necessary to bear in mind when examining strange sera, that complete stoppage of motility without clumping probably does not indicate a negative reaction, and that in such a case it is desirable to control the test by the macroscopic method, or, if that be impossible, by the performance of the microscopic test in several dilutions.

EXPERIMENTS AS TO THE INFLUENCE OF IPECAC ON AMOEBA.

The amoeba experimented with were of two strains, one isolated from the stool of a normal man and the other from tap water. The results would have been more conclusive if a pathogenic amoeba could have been used, but in the opinion of the board the pathogenic amoebae can not be cultivated. However, if one may be allowed to draw conclusions from the effect of drugs on various species of other protozoal organisms, it seems reasonable to assume provisionally that a drug like ipecac, which is effective against the nonpathogenic amoebae is likely to be inimical to the development of the pathogenic variety or varieties. From the experiments it was concluded that ipecac did no harm and probably no good in bacillary dysentery, and that in amoebic dysentery the drug is likely to be of great benefit by acting directly against the amoebae on the exposed surfaces of the bowel and indirectly after absorption into the blood stream on the amoebae imbedded in the tissues surrounding the dysenteric ulcers. It has been demonstrated in a scientific way that ipecac is a true specific for amoebic dysentery, thus confirming the statements of numerous clinical observers. It has also been shown that the various preparations of ipecac vary greatly in efficiency. This affords an explanation of the lack of success attained by the use of this drug in amoebic dysentery by certain other clinicians. The board concludes this action of ipecac is not due to a single ingredient of the ipecac but due in part to the action of emetin, cephaelin, and to other ingredients as yet unknown.

EPIDEMIC OF DYSENTERY AT ORMOC, LEYTE.

The epidemic began in Ormoc and Bay Bay at about the same time, possibly first in Bay Bay, but was well established in both places by the middle of October, 1911. It then began to spread, and appeared in Puerto Bello and Merida about November 1. Later it began to extend to the little barrios and isolated houses in the hill country back of the larger villages. The date of its appearance in Albuera was not ascertained. Transmission was probably by contact for the most part since the cases occurred at regular intervals, and not in large groups, while very many of the deaths reported were in children under three years of age, too young to eat indiscriminately outside their own homes. A striking example of the probable method of transmission was shown at Puerto Bello, where a 4-year old boy with dysentery was found in a small house with five or six other young children. The board saw three or four deposits of intestinal

mucous discharge lying on the floor and the ground outside of the house, affording ideal opportunities for contact infection and also a great attraction to the numerous flies that swarmed about. The subject of any general infection of the water supply can probably be dismissed since the supplies are so varied in all these towns, being derived from shallow wells and several small streams. In addition there was no sudden widespread flare-up, suggesting water-borne infection, in any place visited.

Clinically, the most striking feature was the tremendous mortality. Not a convalescent was found or reported, and only one living case of more than a week's standing was seen. The incidence of the disease among children under six years old was very great. One could drive through the town at a time when all the remaining children would be on the streets and see no more than twenty or thirty small ones.

The usual course of the disease, in the fatal cases, was rapid and overwhelming. The children generally were fairly well and comfortable the first day, with only a moderate number of stools and with but little pain. They were commonly only a little worse the second day, and usually in collapse on the third. Death came within 3 or 4 days at the latest, there being only one case, in which the child lasted more than a week, and this one ultimately died with severe anemia, oedema of face and limbs, and heart failure. The prominent and striking feature in nearly all the cases was the toxemia which, with the mildness of the intestinal symptoms, was very suggestive of the Shiga type of dysentery. Fever was not always present, and usually subsided with the onset of collapse. An average maximum would be 101° F.

The board believes that the disease which visited that section of Leyte was a very virulent form of bacillary dysentery and that it was almost entirely confined to the period of childhood and was characterized by an extremely high mortality.

DYSENTERY BACILLI CARRIERS.

During the first six months of 1911, out of 60 stools examined, from 35 persons, mostly typhoid suspects, and convalescents, four carriers of dysentery bacilli were found. One of these cases had two organisms in his stools; Shiga and Morgan No. 1. The identity of the organisms in these cases was established by their fermentation reactions on the sugars, their morphology and motility, and their indol production.

It is evident that the incidence of dysentery bacillus carriers is as great as, if not greater than, that of typhoid carriers. It is also clear that dysentery convalescents should be returned to duty only under the same restrictions as those now governing typhoid convalescents in the military service. The importance of contact infection from carriers as a cause of bacillary dysentery is greatly emphasized by the findings just recorded. The detection of four dysentery bacillus carriers out of 35 persons examined shows as high a percentage of positive results as any quoted by Chapin, and serves to lay stress on his major proposition, that carriers and missed cases may be very great factors in the spread of disease.

A FEVER OF UNDETERMINED TYPE.

For several years there has been on Corregidor Island a body of civil convicts, drawn from Bilibid Prison in Manila. There are 1,000 of these prisoners and, except for a few Chinese, they are all Filipinos belonging to the various tribes in the archipelago. They are employed

at heavy manual labor, are fed on a ration almost equivalent to that of the Philippine Scouts, and are guarded in a stockade, where they herd together at night in large bunk houses, which, though well ventilated, allows no more than 120 cubic feet of space for each man.

The situation was carefully studied by Lieut. Barber on duty there, and, who later became a member of the board. The greatest factor in the production of disability in the stockade, aside from the large one of trivial injuries and infections, was that of fever, type undetermined. After several months observation, during which time numerous blood examinations and leucocyte counts were made, together with a number of agglutinations with the typhoid bacillus, it was concluded that most of the cases of fever could best be classified under two heads, "ephemeral fever," and "seven to fourteen day fever." A goodly number of the more severe cases of illness proved to be lobar pneumonia, which was found 22 times, there being 2 deaths. A few cases proved to be due to obscure pus infections, though the patient did not complain of local pain. In one such case the local lesion was a carbuncle 2 inches in diameter, over the deltoid. Eliminating all complications, however, there was a very large number of cases which fell very naturally and easily into the two classes mentioned above, and for which no cause was discovered during the observations.

The "ephemeral fevers" deserve little notice; usually the man came in from work on the hot afternoons, showed a high temperature and rapid pulse, complained of headache and dizziness, and recovered promptly on free purgation, rest, and sponging.

The "seven to fourteen day fevers" were charted carefully and showed a regular, characteristic course. An attempt was made to classify them under two headings, that of seven-day and that of twelve-day fever, but careful study of the charts showed that there was no definite division.

The results of the bacteriologic study of this fever were negative. One case gave a good agglutination with bacillus paratyphosus "A," but this reaction occurred on the third day, a time when it would not be expected if due to the febrile disturbance at that time affecting the patient, and it was not increased on the twelfth day. It would, therefore, seem that this single case can be disregarded, since the eight others gave negative reactions, and since this case itself did not give positive results from blood culture and did not show any increase in agglutinating power in a period of nine days.

It would seem that this "seven to fourteen day fever," with its usually rapid onset, its great incidence during the hot weather, its low mortality, the moderate changes in the leucocyte count, as compared with the average count of the Filipino, should be classed with those fevers of doubtful etiology, of which Rogers's "seven-day fever" is a type. It can not, however, be identified with the fever of Rogers, since the course is consistently longer, the pulse more rapid, the leucocyte count higher on the average, and the pain and prostration much less severe. It must be remembered, however, that these stockade prisoners are an especially tough and hardy set of men, hard worked and well fed, and living practically in the open, while Rogers's cases were in Europeans living in the tropical environment of Calcutta.

THE EFFECT OF ULTRA-VIOLET RAYS ON ANIMAL PARASITES IN WATER.

Several investigators have shown that the ultra-violet rays of the spectrum are capable of killing bacteria in a few seconds, and the Westinghouse Cooper Hewitt Co. of London and Paris have con-

structed several types of practical water sterilizers utilizing these rays. The ultra-violet radiation upon which the action of these sterilizers depends is produced by a quartz mercury vapor lamp either suspended over or immersed in the water.

In considering the use of such a sterilizer in the Tropics the board was confronted by the fact that bacterial pollution is not the only nor in some cases the most important danger that lurks in the drinking supply. Amœbæ are found in practically all tropical surface waters, and while in the opinion of the board the free-living species are not pathogenic, it is to be expected that *Entamœba histolytica* will be encountered under the same conditions of pollution that would cause the presence of typhoid bacilli or cholera spirilla in the water. In similar circumstances, *Balantidium coli*, *Lamblia intestinalis*, and other protozoa, as well as the ova or larvæ of various parasites, are liable to occur.

Experiments were conducted to determine the effects of these rays on the organisms mentioned. These experiments taken as a whole undoubtedly demonstrate that in a water supply the amœbæ, whether motile or encysted, may be killed by a comparatively short exposure to ultra-violet rays. Balantidia also appear to be destroyed by the same agency.

These facts afford a very potent argument in favor of the use of these radiations in the practical sterilization of water in the Tropics. The board had no opportunity to test the apparatus manufactured for this purpose, but since the results of these preliminary experiments have proved so satisfactory the board hopes to perform this important work in the near future with a view to determining whether the rays are fatal to amœbæ and other protozoal parasites under the conditions obtaining with the commercial sterilizer in practical use.

EXPERIMENTS TO TEST THE FINENESS OF MESH NECESSARY IN BRONZE NETTING TO PREVENT THE PASSAGE OF ANOPHELINÆ AND STEGOMYIA.

The Surgeon General directed that these experiments be made with a view to determining whether the Philippine Anophelinæ could pass through 16-mesh bronze gauze. Tests were carried out with 8, 12, 14, and 16 mesh gauze and with both horizontal and vertical gauze partitions. Starvation tests were made where a single layer of netting separated the mosquitoes from food and water, and sexual attraction tests where unfertilized females were separated from freshly hatched males by a double partition of the mesh to be examined. A practical test was made by sleeping under a 16-mesh bronze gauze bed net in a locality where anophelines were very numerous.

It was found that 16-mesh bronze gauze was impervious to the following insects: *Myzomyia rossii*, *Myzorhynchus barbirostris*, *Pyreophorus freeræ* (Banks), *Mansonia annulifera*, *Mansonia uniformis*, *Culex fatigans*, and *Culex microannulatus*, *Myzomyia rossii*, which is as small as any common Philippine species of the Anophelinæ, was unable to pass through either 16, 14, or 12 mesh metallic gauze, but did go through 8-mesh cotton netting.

Mosquitoes of the genus *Stegomyia calopus* were found to pass through 16-mesh bronze gauze with considerable ease. Out of several dozen insects which were tested, eight males and nine females succeeded in going through the 16-mesh netting. One female effected

a passage through a double partition of the gauze to join the male on the opposite side.

Our experience agrees with that of Darling, who found in Panama that Stegomyia could pass and Anophelinæ could not pass through 16-mesh metallic gauze.

The board concludes that although the 16-mesh netting will probably keep out all malaria-bearing anophelines found in the Philippines, the board considers its use inadvisable because it does not keep out mosquitoes of the genus Stegomyia, which are not only extremely annoying insects, but are a potential source of danger in case yellow fever should be introduced into the Archipelago.

DIPHTHERIA IN THE PHILIPPINES.

During the last 11½ years 133 cases of diphtheria with 69 deaths have been reported in Manila. The monthly occurrence was January 19, February 9, March 9, April 15, May 15, June 4, July 12, August 10, September 10, October 5, November 18, and December 7.

The number of reported cases is rapidly increasing, probably as a result of greater accuracy in diagnosis in more recent years. Of the 133 cases at least 62 were Filipinos. The figures are sufficient to show that diphtheria is to be expected not infrequently in the Archipelago. The too common belief that the disease does not occur here or occurs only with extreme rarity should be dispelled, since it has led in the past to failures to diagnose certain serious cases which undoubtedly would have been subjected to cultural tests if the illness had occurred in the United States. Season seems to exercise no influence on the incidence of the disease in Manila, whereas in temperate climates the number of cases greatly increase during the colder months. This uniformity of incidence is probably due to the comparatively unvarying temperature conditions existing here.

ARNETH'S NUCLEAR CLASSIFICATION.

Blood counts were completed on 72 American and 50 natives. The board concludes that in all their series of Filipino bloods that there is:

First, an absolute number of white cells within normal limits; second, a markedly low relative proportion of polymorphonuclear neutrophiles; and third, an abnormally high percentage of the neutrophilic elements which fall in Classes I and II of Arneth and which are supposed to be deficient in phagocytic power. Therefore, in the Filipino blood there is both a relative and an absolute reduction in the phagocytes, the cells which, with the aid of opsonins, are concerned in destroying bacterial invaders.

If this state of things is general in tropical races, it may be a visible indication of the lowered resistance of such peoples to certain newly introduced maladies and to some epidemic tropical diseases which generally cause among natives a higher mortality than is experienced among Caucasians. In the first class of diseases may be mentioned measles, leprosy, syphilis, and tuberculosis, and in the second class plague and cholera. Apparently the natives of the Philippines have a good resistence to infections with staphylococci and streptococci, and this clinical fact may be related to the observations of Buchanan who could find no relationship between the degree of nuclear subdivision and the number of cocci engulfed by the neutrophilic cells.

The board concludes, (1) both Filipinos and Americans residing more than a year in the Philippines had a normal average number of white cells per cubic millimeter; (2) in both races the percentage of polymorphonuclear neutrophiles was much decreased below the minimum considered normal for white men in temperate regions; (3)

probably the polymorphonuclear neutrophiles are the only actively phagocytic cells in the circulating blood; (4) the average Arneth picture showed a marked shift to the left in the case of Filipinos and a slight drift in the same direction for Americans resident more than a year in the Philippines; (5) a shift to the left in the Arneth count probably indicates a diminution in the phagocytic power of the blood in question; (6) from the first five conclusions it will be apparent that the Filipinos show an actual absolute reduction in the number of polymorphonuclear neutrophiles (phagocytes) and that of this reduced number an abnormally large proportion are deficient in phagocytic power (in other words, the Filipino has absolutely fewer efficient phagocytes than are found among white men either in the Philippines or at home); (7) this reduction in circulating phagocytic cells may be a visible indication of a lowered resistance to infections on the part of native races; (8) no material differences in the differential count or the Arneth picture were observed between two groups of American soldiers, one group consisting of 28 pronounced blonds, and the other group of 28 pronounced brunettes.

THE SO-CALLED X-BODIES IN BLOOD.

The board demonstrated conclusively that the so-called X-bodies in blood were simply artefacts in glass slides.

EXAMINATION OF EMERGENCY RATIONS.

Tests were made on emergency rations stored in Manila from three to five years. The board found that the rations were free from bacilli of the meat poisoning group, and from the tubercle bacillus, and that both were safe articles of diet and had not been harmed by long storage in the Tropics.

TRANSPORTS.

SANITARY CONDITION.

The sanitary condition of the various transports and the accommodation provided for troops on them has been in the main satisfactory, and the majority of the sanitary faults which existed or have arisen from time to time have been corrected with promptness. A matter of some importance that has been called to the attention of the War Department was the quarantining of some transports at Manila on account of measles and mumps. In regard to this matter the chief quarantine officer stated:

It has been customary upon the arrival of these infected transports to permit the Army to manage the quarantine incident thereto, but in several instances the disease has spread considerably and the civil population has been seriously menaced. In view of the fact that these diseases prevail to a very slight extent in the Philippine Islands, it will be apparent that their introduction here is of serious import. * * * In view of the fact that every transport which has arrived, from January, 1911, to December, 1911, has had either measles or mumps aboard, it is not believed to be unreasonable to ask that troops and their effects be placed on transports in a noninfected condition. If it is very expensive to quarantine troops at San Francisco, it is believed that this might be avoided by quarantining them at the posts from which they start. If the posts in the United States which are known to be infected with measles were thoroughly freed from that disease, and no soldiers or officers sent to the Philippines unless they had been connected with posts which are known to have been free from measles for

a period of at least 21 days prior to their embarkation, it is believed that such a plan would be effective. * * * Measles are here, and they are of the type ordinarily encountered in the United States, and they are causing great havoc among the residents of these islands. If transports infected with the disease had not arrived in the Philippines, it is a reasonable inference that the present epidemic of the prevailing type would not have occurred.

The following is taken from a memorandum on this subject from this office for The Adjutant General:

(1) This office, with the assistance of the Bureau of Insular Affairs, has sought in vain for any law making measles and mumps quarantinable diseases at ports of entry in the Philippines. In paragraph 959 of the Manual for the Bureau of Health for the Philippine Islands, 1911, measles (though not mumps) is named among the "dangerous communicable diseases," together with typhoid fever, chicken pox, filiariasis, tuberculosis of the lungs, and other diseases which are not usually considered quarantinable disaeses in the usual acceptation of that term and as far as ships are concerned or between different communities, although several of them are treated by house quarantine in municipalities.

It appears from the first indorsement on the inclosed paper that all the measures applicable to dangerous communicable diseases are now being applied to such cases of mumps and measles as are landed from transports or occur at posts in the Philippines, and, therefore, it is not clear to this office that under the municipal sanitary regulations of Manila or other regulations promulgated by the Health Department any further action can be reasonably demanded of the military authorities unless the importance of the Army personnel as a factor in the distribution of these diseases in the Philippines is much better established than at present.

(2) The chief quarantine officer states that "it is not believed to be unreasonable to ask that troops and their effects be placed on transports in a noninfected condition." He suggests that this might be done by freeing the posts in the United States thoroughly from these diseases and not sending to the Philippines officers and soldiers unless they are connected with posts which are known to be free from measles at least 21 days prior to their embarkation. The freeing of posts in the United States from these diseases is a consummation devoutly to be wished and the earnest efforts of the Medical Department of the Army have been directed toward this end for many years past. Unfortunately, however, the task is not as simple as it may appear.

Unassigned recruits coming from recruit depots are largely responsible for the transmission of mumps and measles and although every effort is made not to send those who are sick with these contagious diseases and also those known to have been exposed to infection, yet the efforts in this direction have been quite disappointing. The failure has been due in part to the long period of incubation of these diseases and the exceedingly contagious character of measles during the prodromal period of indefinite symptoms. Another serious difficulty which could be obviated is the overcrowded condition of the barracks, especially at Columbus Barracks, Ohio, during the periods when recruiting is active, which prevents effective methods of segregation and isolation. The attention of the War Department has been recently called in a practical and effective way to this need and it is hoped that an appropriation may be obtained to meet it.

The quarantining of even small bodies of unassigned recruits at their depots is by no means a simple task, involving as it does separate messing arrangements and sleeping arrangements for them and their exclusion from the post exchange, reading room, gymnasium, baths, water-closets, and all other places where they come in contact with others of the command. In the cases of regiments and battalions under orders for the Philippines such a quarantine is both impracticable and futile, the only available step being the exclusion from contact with them of all cases of contagious diseases which is now required by the regulations of the Medical Department. Troops are also required by paragraph 194 of the Army Transport Regulations to be examined critically by a medical officer before leaving the posts in order to exclude all cases of contagious diseases. This, however, does not reach men in the period of incubation of infectious diseases, although a number of these are picked up at the port of embarkation before going on board the ship.

Periods of quarantines of large commands for the detection of cases of contagious diseases having long periods of incubation such as mumps, measles, and smallpox, are most unsatisfactory where they have to embark on fixed dates because new cases are liable to occur and prolong still further the expiration of the period of 21 days of freedom from a case of the disease which is suggested by Dr. Heiser. Also, if quarantine is resorted to it can not reasonably be limited to measles and mumps, but should apply to other dangerous communicable diseases also. The enormous expense and inconvenience of holding a large command for indefinite periods, and at the same time

holding a transport in readiness to receive them, can be well appreciated. It has compelled the sanitary department of the Army to accept the point of view adopted by the sanitary authorities in civil life and limit the efforts to control these diseases to segregation of recognized cases and sometimes their more intimate contacts also.

(3) In view of the vast expense and many practical difficulties in the way of carrying out the recommendation of the chief quarantine officer, it is appropriate to consider somewhat critically the reasons for making this request.

The records show that during the year 1911, 59 cases of measles and 46 cases of mumps were transferred from transports to military hospitals in the Philippines. In view of the fact that these cases were carefully segregated in military hospitals, it is extremely improbable that they were brought into contact with the civil population, and in view of the further consideration that measles have existed in Manila for many years, and the chief quarantine officer states that at the time of writing his indorsement probably 1,000 cases existed in Manila and vicinity, it would appear that the presence of measles on Army transports could have very little to do with the diffusion of this disease in Manila.

This seems to be recognized by him, but he states it as his belief that the kind of measles introduced by the Army is a much more serious type than that prevalent in the Philippines. While his opinion in this matter is entitled to all respect, like other scientific facts, it can not be accepted without demonstration. The records of this office show that in the past five years 151 cases of measles have occurred in the Army in the Philippine Islands without a single death, whereas in an outbreak of some 300 cases which occurred at Columbus Barracks in the first part of the year 16 deaths occurred, the case mortality for the United States for 1911 being 28 per 1,000 of sick. These facts would seem to indicate what one would naturally expect, viz: That measles in the tropics is a mild disease alike for soldiers and civilians, Americans and Filipinos, owing to the favorable influences of warmth and abundant fresh air. The chief quarantine officer states that "the fact remains that measles are here and they are of the type ordinarily encountered in the United States, and they are causing great havoc among the residents of these islands."

The vital statistics of the city of Manila show only one death from this cause in 1911, none in 1910, and one in 1909. If the mortality of the Army type of measles as existing in Manila is accurately shown by these statistics, it would hardly appear to warrant the quarantining of troops, the upsetting of sailing dates for transports, or other delays at Manila for the purpose of disinfection.

It is thought that a careful carrying out for the troops and for civilians attached to the Army of the measures now in vogue, which are substantially those required on the occurrence of cases among the civil population of Manila, is all that can reasonably be expected of the military authorities.

During the year 1911, 99 cases of measles and 107 of mumps occurred on transports among the military passengers. Thirty-six cases of the former and 23 of the latter occurred on the *Logan* in March on the trip from San Francisco to Manila. On this same transport during the same trip an extensive attack of ptomaine poisoning occurred, about 800 cases in all, about 50 cases of which were treated in hospital. None of the cases were dangerous, and only one was considered of sufficient importance by the surgeon to be made of record. An investigation was conducted under direction of the commanding officer of the troops, but the cause was not determined.

No case of smallpox occurred among any of the military passengers or officers. One case occurred on the *Dix* in the person of a Filipino in August, 1911. The *Dix* was then lying at Seattle where smallpox was endemic. The proper precautions were taken and no secondary case occurred.

DENTAL AND ORAL DISEASES.

The number of dental operations during the year was 57,454, being an increase over the preceding year, which was 49,666. The ratio

per 1,000 of mean strength was also greater, being 716.54, as compared with 634.13. This, however, can not be taken as a measure of the dental diseases in the Army, but represents what the number of dentists available are able to accomplish. The number of dentists authorized has been increased by Congress, so that ultimately each man in the Army can receive at least one treatment yearly.

The summary of the work of contract dental surgeons is contained in the following table:

TABLE NO. 63.—*Dental and oral diseases.*

	Cases admitted to treatment.		Operations performed.	
	Number.	Ratio.	Number.	Ratio.
United States (continental) exclusive of Alaska	32,441	558.18	34,204	588.52
Philippine Islands	17,605	938.68	21,188	1,129.73
Alaska	440	375.43	452	385.67
Hawaii	2,052	960.67	1,610	753.75
Total	52,538	655.23	57,454	716.54

DENTAL CARIES—NUMBER OF TEETH TREATED.

	White troops.		Colored troops.		Filipino troops.		Total.	
	Number.	Ratio.	Number.	Ratio.	Number.	Ratio.	Number.	Ratio
United States (continental) exclusive of Alaska	18,711	339.05	377	128.54			19,088	328.43
Philippine Islands	9,605	712.06			411	78.05	10,016	534.04
Alaska	402	343.00					402	343.00
Hawaii	1,123	525.75					1,123	525.75
Total	29,841	414.56	377	128.54	411	78.05	30,629	381.99

GENERAL HOSPITALS.

LETTERMAN GENERAL HOSPITAL, SAN FRANCISCO, CAL.

This hospital, formerly known as the "General Hospital, San Francisco, Cal.," was changed to the "Letterman General Hospital," in honor of Jonathan Letterman, Medical Director, Army of the Potomac, by General Order No. 152, War Department, November 23, 1911. It is used as a base hospital for the Philippines and Hawaii, a post hospital for the Presidio, San Francisco, a general hospital for the western part of the country, and is the largest general hospital in the Army.

The following construction has been completed during the year: a new officers' ward and an isolation ward; an addition to the nurses' quarters; new bath and toilet rooms for about one-half of the wards; additions to the power house, laundry, and dining room; a new road in front of the storehouses and shops; the installation of an automatic fire-alarm system for the protection of the entire hospital; two solariums of two rooms each, giving a place for patients during the day; in addition, a large amount of smaller repairing was carried out.

A new kitchen is now being constructed. This building is very much needed. The old one was inadequate for the present needs of of the hospital and would give no opportunity for expansion of the hospital in an emergency.

The commanding officer of the hospital states that—

> There is also needed a building for hydriatic, thermic, and mechano-therapy, etc. The stables and some of the storehouses are old, built by emergency methods, are unsuitable, and should be replaced by buildings especially constructed. A considerable allotment is also needed for the repairs of the roads and the improvement of the hospital grounds. This branch of work has not kept pace with the general improvement of the hospital, which is a well arranged, thoroughly equipped, and up to date hospital.

Excellent professional work has been done in all departments of the hospital, and no case of any kind among those entitled in any way to the professional care of the Medical Department has been refused admission.

Only two cases of typhoid were treated during the year. One, a woman, and one, a recruit, of less than a month's service at the time of admission to sick report. The commanding officer states that amebic dysentery has also become a rare disease, only six cases having been admitted during the year, and of these, five were old cases. He also states that the work of the disability board has been very satisfactory. Increased care has been taken in obtaining evidence in all disability cases from every source, and he is of the opinion that the results have justified the necessarily increased amount of work.

The number of patients admitted during the year, including civilians and military convicts, was 2,972, being a decrease of 122 from the preceding year. There was 302 cases remaining in hospital, December 31, 1910, making a grand total of 3,274 patients treated in this hospital. Of this number 101 were officers, 2,771 enlisted men, 11 general prisoners, 202 male civilians, 189 female civilians. There were 1,628 medical, 887 surgical, and 759 venereal cases treated.

The daily average number of patients treated in hospital was 251.4 this being a decrease of 30 from the preceding year. Of this number 14.5 were officers, 213.2 enlisted men, 1.9 general prisoners, 13 male civilians, and 8.8 female civilians.

The average number of days in hospital was as follows:

	Officers.	Enlisted.	Military convicts.	Civilians.		Total.	
				Male.	Female.	1911	1910
Medical	7.361	93.273	1.589	5.904	2.175	110.304	121+
Surgical	6.287	56.147	.084	5.200	6.523	74.243	85+
Venereal	.890	63.761	.205	1.934	.095	66.887	74+

There were 15 deaths during the year as compared with 22 for 1910. The following were the causes:

Appendicitis, perforated, with general peritonitis.
Broncho-pneumonia.
Cerebral embolism.
Dilatation of heart (mitral disease).
Fracture of vertebræ, cervical.
Hemorrhage, internal (gastric ulcer).
Nephritis.
Peritonitis, due to injury causing rupture of intestine.
Puerperal eclampsia.
Sarcoma of rectum with general peritonitis.
Shock, following dislocation of right hip and fracture, left leg.
Shock, following operation (introsusception).
Suicide, poisoning by carbolic acid.
Sudden death, natural causes.
Tuberculosis, pulmonary.

Included in this number were 7 enlisted men (American), 2 Philippine Scouts, and 6 civilians. The single death for pulmonary tuberculosis was in the case of a civilian.

American soldiers are not discharged for disability in the Philippines except in very rare cases, and there were none thus discharged in 1911. All the native enlisted men physically disabled for the service are discharged in the islands. The following table shows the number discharged at this hospital during the year, with causes:

Discharged on certificates of disability (Philippine Scouts):	
Ankylosis, elbow joint	1
Faulty union, tibia and fibula	1
Filariasis	1
Leprosy	2
Loss of right hand (amputation)	1
Mental depression and insanity	8
Optic atrophy	1
Retrobulbar neuritis	1
Tuberculosis, pulmonary	10
Total	26

There were 35 discharged in 1910.

An active surgical clinic is maintained. The following is a statement of surgical conditions for which operations were performed:

Appendicitis	60	Elephantiasis scrotum and penis	1
Hernia	10	Epithelioma	1
Cholecystitis	1	Cellulitis	2
Intussusception	1	Adenitis	42
Puerperal eclampsia	1	Ankylosis	2
Sarcoma rectum	1	Diseases, gynecological	51
Perinephritis	1	Diseases, genito-urinary, male	35
Mastoiditis	2	Diseases of nose and throat	2
Hepatic abscess	1	Diseases of the feet	10
Pulmonary abscess	1	Diseases of the anus and rectum	22
Other abscesses	7	Diseases of the veins	8
Detached cartilage knee	5	Wounds	7
Dislocation, recurrent, shoulder	2	Others	54
Division musculospiral nerve	1		

There were 5 deaths following operations. These deaths were included in the list above and were due to appendicitis, intussusception, spinal fracture, sarcoma of rectum, and puerperal eclampsia.

In the eye, ear, nose, and throat department there were 5,924 cases treated, 477 refractions, and 170 operations.

The following is a condensed tabular statement of the work done in the laboratory:

Examinations made in the pathological laboratory from January 1 to December 31, 1911.

Blood examinations	2,594
Wassermann reactions	3,485
Urine examinations	1,542
Feces examinations	2,247
Sputum examinations	1,436
Smears and cultures	144
Sections	38
Autopsies	13
Animal inoculations and dissections	17
Chemical, biological, and miscellaneous examinations	1,447

The average number of medical officers on duty was 10; dental surgeons, 2; nurses, 20; and Hospital Corps men, 97.

PROVIDENCE HOSPITAL.

The act approved March 4, 1911, having appropriated $19,000 for the support and medical treatment of destitute patients in the city of Washington, D. C., under contract to be made with Providence Hospital by the Surgeon General of the Army, the relief afforded was as follows:

Patients in hospital, July 1, 1911	96
Admitted during the year	1,275
Total number treated	1,371
Average number admitted per month	114
Number remaining in hospital June 30, 1912	87
Total number of days' treatment afforded	33,836
Average number of days' treatment per patient	25
Average number of patients treated per day	92
Longest term of treatment (days)	366
Shortest term of treatment (days)	1
Number of patients in hospital during the whole year	1

LABORATORIES.

ARMY MEDICAL SCHOOL.

No changes of importance have been made in the laboratories during the past year. The equipment of the typhoid vaccine laboratory has been increased until it is now possible to manufacture 25 liters of the vaccine each week. The demand for other vaccines has increased, particularly for gonococcus and staphylococcus vaccines, and it has been necessary to make them in larger quantities than heretofore.

Several temporary but no chronic typhoid bacillus carriers were found during the year. Before returning typhoid convalescents to duty it is a rule to examine their urine and feces for typhoid bacilli and at least three negative examinations are considered necessary for the exclusion of both temporary and chronic bacillus carriers.

making and seeding lawns, grading and draining, planting of hedges the entire length of Georgia Avenue boundary of the reservation and around officers' and noncommissioned officers' quarters, the planting of bushes and other flowering shrubs and plants, and the repair and maintenance of roads with road metal. Practically all of these improvements were effected by the labor of troops. The replacing of 5 arc lights by 15 incandescent street lamps has resulted in a better lighting of the walks about the post. Money has been allotted for the erection of a contagious disease hospital and a building containing kitchens and mess halls. The erection of the latter structure will remove the odors of cooking, which now permeate the entire building, and will furnish adequate dining-room accommodations for the Hospital Corps detachment which are at present greatly restricted.

The following new buildings are urgently needed: Barracks for the Hospital Corps detachment, with gymnasium and exchange, two sets of quarters for married and one set for bachelor officers, one double set of noncommissioned officers' quarters. In regard to the barracks for the Hospital Corps with the gymnasium and exchange the commanding officer states that—

> Part of the Hospital Corps detachment is quartered in the attic of the hospital proper, the remainder in the barracks of Field Hospital No. 3. The attic of the hospital was not originally intended to be used as quarters and is but a makeshift. It is excessively hot in summer and illy ventilated in winter. There is no room available at the post where the enlisted men can gather for recreation, amusement, or reading Some such place is especially desirable for an organization like the Field Hospital, which is largely composed of recruits. It would tend to contentment and aid in maintaining discipline. A building containing gymnasium, rooms for a post exchange, and a dormitory for the Hospital Corps detachment on duty at the hospital proper is recommended.

The number of cases admitted during the year, including retired officers and enlisted men and civilians, was 565, this being a decrease of 29 from the preceding year. Of this number 58 were officers, 401 enlisted men, 13 retired officers, 40 retired and discharged soldiers, 52 civilians, and 1 army nurse. There were no general prisoners admitted during the year. Three hundred and eighty-six of these cases were medical and 179 were surgical.

The daily average number of patients was as follows: Officers, 11.5; enlisted men, 34.6; retired officers, 0.7; retired and discharged soldiers, 2.8; civilians, 2; Army Nurse Corps, 0.005; total, 51.6, this being a decrease of 3.2 from the preceding year.

The following table shows the movement of the sick, together with the principal causes of admission, during the calendar year 1911, civilians being included:

Remaining on sick report Dec. 31, 1910		57
Admissions:		
For diarrhea and dysentery	8	
For malarial fevers	35	
For typhoid fever	6	
For rheumatic affections	13	
For venereal diseases	87	
For injuries	81	
For insanity	3	
For alcoholism	15	
For all other causes	317	
Total admissions during the year		565
Total admissions to be accounted for		622

Dispositions:	
Total returned to duty	398
Discharged for disability	27
Discharged for expiration of term	9
Deaths from all causes	10
Deserted	1
Transferred to other general hospitals	23
Otherwise disposed of	103
Total dispositions during the year	571
Remaining on sick report Dec. 31, 1911	51

There were 9 deaths; of this number 3 were enlisted men, 3 retired officers, and 3 retired soldiers. The causes were as follows: Sarcoma, left, superior maxilla; intestinal obstruction; typhoid fever; carcinoma of the tongue and pharynx; carcinoma intestinal; nephritis (3); pneumonia, lobar.

There were 27 men discharged on certificate of disability for 18 different causes, as follows: Result of fractures, 4; defective hearing, 3; diabetes mellitus, 3; defective vision, 2; nephritis, 1; muscular rheumatism with senility, 1; loss of leg, 1; coxitis, tubercular, 1; paralysis, 1; defective feet, 1; defective teeth, 1; leukemia, 1; hernia, 2; hysteria, 1; abscess of liver, 1; articular rheumatism, 1; fracture of spine, 1; and osteo-arthritis of spine, 1.

An active surgical clinic is maintained at this hospital. The following is a statement of surgical conditions for which operations were performed:

Appendicitis	21	Dislocation, eleventh dorsal vertebra	1
Hernia	16	Ostitis	2
Hepatic abscess	4	Sarcoma, left upper maxillary region	1
Colitis amœbic	1	Dislocation acromio-clavicular articulation, left	1
Empyema	1	Osteoma	1
Habitual dislocation, right shoulder joint	1	Osteoperiostitis	1
Exophthalmic goiter	1	Amputations	1
Intestinal obstruction	1	Diseases of eye, ear, and nose	37
Tubercular peritonitis	1	Diseases of the mouth, pharynx, and œsophagus	57
Cirrhosis of liver	1	Diseases of anus and rectum	10
Carcinomatosis, abdominal	1	Diseases, genito-urinary	9
Fæcal fistula	1	Diseases of skin and cellular tissue	17
Biliary fistula	1	Diseases of lymphatics	15
Cholelithiasis	1	Diseases of neck and thorax	1
Cholecystitis	1	Diseases, gynecological	9
Aneurism (Matas operation)	1	Others	6
Villous arthritis	3		
Fractures, and results of	8		

The average number of medical officers on duty during the year was 7, and of enlisted men 66. A field hospital was stationed here during the year, as well as an ambulance company, which latter was, however, transferred to Fort Leavenworth during the summer of 1911.

The following is a tabular statement of work done in the laboratory during 1911:

Examinations of urine	820
Examinations of blood	362
Examinations of feces	139
Examinations of sputum	80
Total examinations during year	1,401

GENERAL HOSPITAL, FORT BAYARD, N. MEX.

This hospital is for the treatment of cases of pulmonary tuberculosis in the Army. Fort Bayard is situated in the southwestern part of New Mexico. The reservation originally extended about 4 miles north and south and 3 miles east and west and had an area of approximately 13½ square miles. Several years ago it was enlarged by the purchase of land to the north and by the addition, through executive order, of various tracts of public land, the object of the enlargement being the more perfect protection of the watershed and the acquisition of additional water. On the north the land rises rapidly, reaching the height of 9,000 feet at Black Peak, about 8 miles from the post. In this direction the surface is broken by rocky hills covered with pinyon, juniper, and western yellow-pine trees. The country is picturesque, and fine views are to be had from the hills. To the south the valleys widen into vast treeless plains.

The feature which constitutes the peculiar excellence of the climate of Fort Bayard and distinguishes it from other parts of the Rocky Mountain Plateau is its relative equability. The climate is such that out-door life is pleasant throughout the year. Two factors contribute to secure this result—the altitude and the geographical position. The altitude, 6,165 feet, prevents excessive heat; the hot plains of a lower elevation which surround on all sides the mountainous region in which Fort Bayard is situated, temper the cold winds of winter and prevent excessive cold.

The buildings reported under construction in the last annual report have all been completed. The commanding officer of this hospital reported in his annual report for 1911 that for the first time during a number of years no construction was in progress at the hospital.

The number admitted during the year, including beneficiaries of the Soldiers' Home, civilians, and general prisoners was 624, this being a decrease of 147 from the preceding year. There were 220 remaining in hospital December 31, 1910, making a total of 844 treated during the year. Of this number 24 were officers, 304 enlisted men, 1 general prisoner, 74 civilians, and 441 beneficiaries of the Soldiers' Home. There were 806 medical cases and 38 surgical cases treated.

The daily average number of patients was 221.2, this being an increase of three over the preceding year. Of this number 11.3 were officers, 77.1 enlisted men, 115.3 beneficiaries of the Soldiers' Home, and 14.5 civilians.

The following tables show the movement of the sick during the year, with principal causes of admission and disposition:

	Officers, enlisted men, and civilians.	Beneficiaries of Soldiers' Home.	Total.
ADMISSIONS.			
For tuberculosis	192	314	506
For gunshot wounds	1	.....	1
For diarrhea and dysentery	4	.....	4
For rheumatic affections	4	.....	4
For venereal diseases	20	.....	20
For injuries	22	.....	22
For alcoholism	3	.....	3
For all other causes	64	.....	64
Total admissions during 1911	310	314	624
Remaining in hospital on Dec. 31, 1910	94	126	220
Total to be accounted for	404	440	844
DISPOSITIONS.			
Left hospital	.....	260	260
Returned to duty	136	.....	136
Discharged for disability	135	.....	135
Discharged by expiration of term of service	2	.....	2
Deaths from all causes	18	21	39
Transferred to other general hospitals	3	.....	3
Otherwise disposed of	27	.....	27
Total dispositions, 1911	321	281	602
Remaining in hospital Dec. 31, 1911	83	159	242
Total to be accounted for	404	440	844

The causes and number of deaths which occurred at this hospital during the year appear in the following table:

Causes.	Officers.	Enlisted men.	Beneficiaries Soldiers' Home.	Civilians.	Total.
Nephritis, tuberculous, chronic	.....	.....	1	.....	1
Pneumonia, lobar	.....	.....	.....	1	1
Tuberculosis, miliary, general, acute	1	.....	.....	1	2
Tuberculosis, pulmonary, chronic	.....	10	20	5	35
Total	1	10	21	7	39

The following is a statement of discharges from the Army, with causes, not including Hospital Corps detachment on duty at this hospital:

Causes.	Officers.	Enlisted men.
By expiration of term of service	.....	2
For disability, as follows:		
Pulmonary tuberculosis	.....	132
Pleurisy, tuberculous	.....	1
Cystitis, tuberculous	.....	1
Empyema, chronic	.....	1
Total	.....	137

There were 48 surgical operations performed during the year. Of this number 47 were successful, with one failure, and without a death. The following is a condensed statement:

Genito-urinary	13	Skin and cellular tissues	5
Anus and rectum	4	Mouth and pharynx	7
Abdomen	8	Others	6
Thorax	5		

The laboratory work done during the year may be itemized as follows:

Examinations of sputum	8,204
Examinations of urine	5,499
Examinations of blood	1,108
Tuberculin tests, bovine	124
X-ray examinations and photography	21
Miscellaneous examinations	62
Autopsies, human	34
Autopsies, bovine	19
Histological examination of post-mortem tissue	184
Others	128

The mean strength of the personnel on duty at this hospital for the year was 11.1 medical officers, other officers 2.5, Army Nurse Corps, 17.87, Hospital Corps 118.34, and Signal Corps 1.

The following table shows the result of treatment in all cases of pulmonary tuberculosis:

Class.	Number.	Apparently cured.		Arrested.		Improved.		Unimproved.		Died.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Incipient	33	3	9.09	2	6.06	25	75.75	2	6.06	1	3.03
Moderately advanced	303	9	2.97	14	4.66	228	75.24	46	15.14	6	1.98
Far advanced	254	.....	.....	1	.39	157	61.81	68	26.77	28	11.00
Acute miliary	2	.....	.....	.....	.....	.....	.....	.....	.....	2	100.00
Total	[1] 592	12	2.02	17	2.87	410	69.25	116	19.59	37	6.25

[1] Includes 83 cases under treatment one month or less. Does not include 5 cases which were only treated for a few days.

The result of treatment in completed cases of pulmonary tuberculosis was as follows:

Class.	Number.	Apparently cured.		Arrested.		Improved.		Unimproved.		Died.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Incipient	16	3	18.75	2	12.50	9	56.25	1	6.25	1	6.25
Moderately advanced	196	9	4.59	14	7.14	138	70.40	29	14.79	6	3.06
Far advanced	144	.....	.....	1	.69	88	61.11	27	18.73	28	19.44
Acute miliary	2	.....	.....	.....	.....	.....	.....	.....	.....	2	100.00
Total	[1] 358	12	3.35	17	4.75	235	65.64	57	15.92	37	10.33

[1] Includes 43 cases under treatment one month or less.

The number of completed cases of pulmonary tuberculosis was 358. Important complications were present in 126 cases, as follows:

Tuberculous laryngitis in	38
Pleurisy with effusion in	4
Alcoholism in	3
Syphilis in	23
Empyema in	3
Pyopneumothorax in	2
Tuberculous orchitis and epididymitis in	3
Addison's disease in	3
Tuberculous enteritis in	16
Tuberculous fistula in ano in	4
Tuberculous otitis in	9
Valvular disease of the heart in	2
Tuberculous meningitis in	3
Tuberculous disease of hip joint, of sacro-iliac joint, of shoulder joint, of ilium, tuberculous cervical adenitis, tuberculous inguinal adenitis, tuberculous cystitis, tuberculous meningo-myelitis, nephrolithiasis, tuberculous pyo-nephrosis, chronic amœbic dysentry, cirrhosis of the liver, and dementia praecox, each	1

From the following table, which shows the length of treatment of cases which terminated fatally, it is clearly apparent that comparatively few of the deaths at this institution occur in cases which would be considered as suitable for sanatorium treatment, 10 patients having died within the first month and 16 within four months after admission or readmission in a total of 37 deaths:

	Weeks.				Months.			Years.					Total.
	1	2	3	4	1–4	5–8	9–12	1	2–3	4–5	6–7	8–9	
Time of death of cases under continuous treatment	1	....	1	....	10	7	2	2	....	....	....	....	23
Time of death of cases not under continuous treatment:													
(a) Reckoned from last admission	5	1	1	1	6	.....	.....	....	....	....	....	....	14
(b) Reckoned from original admission	....	....	....	....	.....	.....	2	5	2	2	2	1	14
Total	....	....	....	....	.....	.....	.....	....	....	....	....	....	37

ARMY AND NAVY GENERAL HOSPITAL, HOT SPRINGS, ARK.

This hospital is intended especially for patients having diseases in which hydrotherapeutic treatment is indicated. Paragraph 1459, Army Regulations, as amended by General Order 174, War Department, 1910, states that—

> The Army and Navy General Hospital, Hot Springs, Ark., is under the direction of the Secretary of War, and is devoted to the treatment of the officers and enlisted men of the military and naval service of the United States, cadets at the United States Military and Navy Academies, officers of the Revenue-Cutter Service, officers of the Public Health and Marine-Hospital Service, and honorably discharged soldiers and sailors of the Regular and Volunteer Army and Navy of the United States for such diseases as the waters of the hot springs of Arkansas have an established reputation in benefiting.

Some improvements and additions were made during the year. A modern brine-system plant for cold storage has been installed in a small detached building near the power house, and the old plant removed from the basement of the hospital. An automatic "push-button-control" electric elevator has replaced the old hydraulic one

in the administration building. Two new engines, two dynamos, and a triplex electric pump were installed. An addition has been built to the power house which, besides doubling its capacity, provides space for a disinfecting room, mortuary, carpenter shop, paint shop, engineer's and plumber's storeroom, and for an enlargement of the laundry. The grounds have been improved, new sidewalks and drains laid, and a new road constructed from the barn to the crematory.

* * * * * * *

The following table shows the movement of sick, together with the principal causes of admission, during the calendar year 1911:

Remaining in hospital Dec. 31, 1910	107
Admissions:	
Diseases of the respiratory system	7
Diseases of the heart	30
Diseases of the urinary system	35
Dysentery	6
Rheumatism, articular	195
Rheumatism, muscular	46
Sprains and muscular strains	5
Gastritis	13
Diseases of the kidneys	39
Arthritis	47
Syphilis and results	11
Gonorrhea and results	14
Carcinoma of stomach	4
Diseases of the circulatory system	70
Malarial affections	12
Injuries	14
All other causes	198
Total in hospital during year	853
Dispositions:	
Returned to duty	107
Died	11
Discharged on certificate of disability	12
Discharged per expiration of term of service	2
Transferred	4
Discharged from hospital (civilians)	601
Otherwise disposed of	1
Remaining Dec. 31, 1911, in hospital	115
	853

There were 11 deaths during the year. Of this number 2 were officers, 2 enlisted men, and 7 civilians. The following table shows the causes of deaths:

Chronic interstitial nephritis	3
Chronic parenchymatous nephritis	2
Atrophic cirrhosis of liver	1
Carcinoma of stomach and liver	1
Broncho-pneumonia	1
Mitral regurgitation	1
Acute ulcerative endocarditis	1
Chronic endocarditis and mitral regurgitation	1
Total	11

There were 12 discharges on certificates of disability. The following is a list of the causes:

Nocturnal epilepsy	1
General paresis	1

Chronic amebic dysentery	1
Ankylosis of knee joint	1
Chronic articular rheumatism	1
Chronic parenchymatous nephritis	2
Tuberculous arthritis	1
Paralysis of thigh muscles, result of poliomyelitis	1
Chronic arthritis	1
Shortening of thigh and ankylosis of knee, following fracture of femur	1
Chronic alcoholism	1
Total	12

The surgical clinic at this hospital is small. During the year 25 operations were performed, all of which were successful. The following is a statement of the laboratory work done:

Blood examinations	13
Feces examinations	31
Sputa examinations	8
Urine examinations	955
Total	1,007

The mean strength of the command for the year was: Medical officers, 4; Army Nurse Corps, 4.9; post noncommissioned officers, 1; enlisted men, Hospital Corps, 55.33.

DIVISION HOSPITAL, MANILA, P. I.

This hospital is the general hospital for the Philippine Islands. It differs from the general hospitals in this country in that it is not directly under the control of the Surgeon General, but owing to its geographic location it is under the authority of the division commander.

The following table shows the movement of the sick, together with the principal causes of admission during the calendar year of 1911:

	Officers.	Enlisted men (Americans).	Scouts.	Civilians.
ADMISSIONS.				
For gunshot wounds	1	7		1
Diarrhea and dysentery	1	25	1	18
Malarial fever	7	13	4	4
Typhoid fever		1	2	1
Rheumatic affections	3	26		5
Venereal diseases	7	412	2	35
Injuries	6	143	2	73
Insanity	2	45	6	7
Alcoholism	1	35		4
All other causes	122	918	38	541
Total	150	1,625	55	689
Total admissions during the year				2,519
Remaining in hospital Dec. 31, 1910				137
Total to be accounted for				2,656
DISPOSITIONS.				
Returned to duty	120	1,395	27	27
Discharged for disability			26	
Discharged per expiration		9	2	
Discharged, unsuited for service			1	
Deaths from all causes		7	2	6
Transferred to other hospital	27	234		14
Otherwise disposed of				652
Total	147	1,645	58	699
Aggregate				2,549
Remaining in hospital Dec. 31, 1911				106
Remaining in quarters Dec. 31, 1911				1

There were 15 deaths during the year as compared with 22 for 1910. The following were the causes:

Appendicitis, perforated, with general peritonitis.
Broncho-pneumonia.
Cerebral embolism.
Dilatation of heart (mitral disease).
Fracture of vertebræ, cervical.
Hemorrhage, internal (gastric ulcer).
Nephritis.
Peritonitis, due to injury causing rupture of intestine.
Puerperal eclampsia.
Sarcoma of rectum with general peritonitis.
Shock, following dislocation of right hip and fracture, left leg.
Shock, following operation (introsusception).
Suicide, poisoning by carbolic acid.
Sudden death, natural causes.
Tuberculosis, pulmonary.

Included in this number were 7 enlisted men (American), 2 Philippine Scouts, and 6 civilians. The single death for pulmonary tuberculosis was in the case of a civilian.

American soldiers are not discharged for disability in the Philippines except in very rare cases, and there were none thus discharged in 1911. All the native enlisted men physically disabled for the service are discharged in the islands. The following table shows the number discharged at this hospital during the year, with causes:

Discharged on certificates of disability (Philippine Scouts):	
Ankylosis, elbow joint	1
Faulty union, tibia and fibula	1
Filariasis	1
Leprosy	2
Loss of right hand (amputation)	1
Mental depression and insanity	8
Optic atrophy	1
Retrobulbar neuritis	1
Tuberculosis, pulmonary	10
Total	26

There were 35 discharged in 1910.

An active surgical clinic is maintained. The following is a statement of surgical conditions for which operations were performed:

Appendicitis	60	Elephantiasis scrotum and penis	1
Hernia	10	Epithelioma	1
Cholecystitis	1	Cellulitis	2
Intussusception	1	Adenitis	42
Puerperal eclampsia	1	Ankylosis	2
Sarcoma rectum	1	Diseases, gynecological	51
Perinephritis	1	Diseases, genito-urinary, male	35
Mastoiditis	2	Diseases of nose and throat	2
Hepatic abscess	1	Diseases of the feet	10
Pulmonary abscess	1	Diseases of the anus and rectum	22
Other abscesses	7	Diseases of the veins	8
Detached cartilage knee	5	Wounds	7
Dislocation, recurrent, shoulder	2	Others	54
Division musculospiral nerve	1		

There were 5 deaths following operations. These deaths were included in the list above and were due to appendicitis, intussusception, spinal fracture, sarcoma of rectum, and puerperal eclampsia.

In the eye, ear, nose, and throat department there were 5,924 cases treated, 477 refractions, and 170 operations.

The following is a condensed tabular statement of the work done in the laboratory:

Examinations made in the pathological laboratory from January 1 to December 31, 1911.

Blood examinations	2,594
Wassermann reactions	3,485
Urine examinations	1,542
Feces examinations	2,247
Sputum examinations	1,436
Smears and cultures	144
Sections	38
Autopsies	13
Animal inoculations and dissections	17
Chemical, biological, and miscellaneous examinations	1,447

The average number of medical officers on duty was 10; dental surgeons, 2; nurses, 20; and Hospital Corps men, 97.

PROVIDENCE HOSPITAL.

The act approved March 4, 1911, having appropriated $19,000 for the support and medical treatment of destitute patients in the city of Washington, D. C., under contract to be made with Providence Hospital by the Surgeon General of the Army, the relief afforded was as follows:

Patients in hospital, July 1, 1911	96
Admitted during the year	1,275
Total number treated	1,371
Average number admitted per month	114
Number remaining in hospital June 30, 1912	87
Total number of days' treatment afforded	33,836
Average number of days' treatment per patient	25
Average number of patients treated per day	92
Longest term of treatment (days)	366
Shortest term of treatment (days)	1
Number of patients in hospital during the whole year	1

LABORATORIES.

ARMY MEDICAL SCHOOL.

No changes of importance have been made in the laboratories during the past year. The equipment of the typhoid vaccine laboratory has been increased until it is now possible to manufacture 25 liters of the vaccine each week. The demand for other vaccines has increased, particularly for gonococcus and staphylococcus vaccines, and it has been necessary to make them in larger quantities than heretofore.

Several temporary but no chronic typhoid bacillus carriers were found during the year. Before returning typhoid convalescents to duty it is a rule to examine their urine and feces for typhoid bacilli and at least three negative examinations are considered necessary for the exclusion of both temporary and chronic bacillus carriers.

Summary of laboratory work in the laboratories of the Army Medical School for the year ending Dec. 31, 1911.

Examinations of typhoid cases	776
Convalescents examined:	
Positive	5
Negative	18
Suspected carriers or contacts examined:	
Positive	11
Negative	57
Widals:	
Positive	33
Negative	42
Blood cultures:	
Positive	4
Negative	26
Blood cultures from clots:	
Positive	1
Negative	32
Examination of feces for *B. typhosus:*	
Positive	24
Negative	69
Examination of urine for *B. typhosus:*	
Positive	1
Negative	53
Examination of feces for *B. paratyphosus:*	
Positive	0
Negative	3
Examination of feces for *B. dysenteriæ:*	
Positive	0
Negative	13

Clinical laboratory examinations for year ending Dec. 31, 1911.

Blood counts		168
Differential counts		94
Malaria		113
Urinalysis		184
Sputa for T. B		77
Feces		124
Water, bacteriological examination		171
Cultures of pus, exudates, etc		225
Animal inoculations for immune sera, diagnosis, etc		286
Histological examinations of operative and post mortem tissues		483
Miscellaneous examinations, gonococcus, etc		303
Autogenous vaccines prepared		34
Stock staphylococcus vaccine	cubic centimeter	822
Stock streptococcus vaccine	do	216
Stock pneumococcus vaccine	do	24
Stock gonococcus vaccine	do	1,297
Wassermann examinations		6,189
Positive		1,978
Negative		1,322
Reexaminations		2,889
Examination for the treponema pallidum:		
Positive		27
Negative		18
Treatment with salvarsan		111
Treatment by bacteriological vaccines		695

TYPHOID FEVER PROPHYLACTIC.

The typhoid prophylactic has been prepared in the laboratory of the Army Medical School as heretofore, and no change of importance has been made in its method of preparation.

During the calendar year 1911 the following quantities of the typhoid prophylactic were sent out from this laboratory:

Typhoid prophylactic shipped, calendar year 1911.

	Cubic centimeters.
Navy	50,625
Army	237,540
National guard	22,241
Civilians and civil institutions	6,692
	317,098

For the first six months of 1912 the issues of typhoid prophylactic from this laboratory were as follows:

First six months 1912:	Cubic centimeters.
Navy	153,408
Army	87,387
National Guard	23,136
Civilians and civil institutions	1,306
Various Government departments	1,581
	266,818

The large quantity used by the Navy was due to the adoption by that department of compulsory vaccination against typhoid fever.

During the year considerable experimental work has been undertaken with filtrates of cultures of the typhoid bacillus and with various strains of the bacillus, in the production of antibodies in animals. This work is as yet incomplete but would seem to indicate that the vaccine as prepared in this laboratory is more efficient than that prepared from filtrates of the organism.

STUDIES IN SYPHILIS.

The work on syphilis referred to in last year's report has been continued and extended. The spirochætæ of syphilis and yaws have been carried on in rabbits, and thanks to Dr. Noguchi cultures of these organisms, as well as of other spirochætæ, have been on hand for demonstration and study. The value of the "luetin test" as supplementary to the Wassermann reaction is being investigated. Work with specific antigens will be referred to later.

* * * * * * *

MEDICAL DEPARTMENT.

The Medical Department consists of the Medical Corps, the Medical Reserve Corps, the Dental Corps, the Army Nurse Corps, and the Hospital Corps.

The following statement shows the strength of the personnel, commissioned, enlisted and employed, by contract or otherwise, of the Medical Department on June 30, 1912:

Medical officers	414
Medical reserve officers on active duty	115
Contract surgeons	11
Dental surgeons, commissioned	28
Acting dental surgeons, under contract	10
Army Nurse Corps	125
Hospital Corps	3,496
Civil employees	214
Total	4,413

MEDICAL CORPS.

The Medical Corps is composed of the commissioned medical officers of the Regular Army.

Authorized strength June 30, 1912	445
In service June 30, 1911	381
Appointed during the year	39
Total	420
Losses during year	6
In service June 30, 1912	414

On October 2, 1911, 47 candidates who had passed the preliminary examination for appointment in the Medical Corps reported at Washington to take the course of instruction at the Army Medical School. Thirty-nine successfully completed the course of instruction at the school and were graduated May 31, 1912; 37 of the graduates were recommended for appointment in the Medical Corps of the Army, but before receiving commission 1 of them resigned. Owing to illness, one of the student officers was not able to take the examination and graduate with the rest of his class, but was given a special examination later and has been recommended for commission in the Medical Corps.

Losses during the fiscal year.

	Brigadier generals.	Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieutenants.	Total.
Retired		1		1			2
Resigned					2		2
Discharged						1	1
Died		1					1
Aggregate		2		1	2	1	6

The death was Col. Louis W. Crampton, April 12, 1912.

PROMOTIONS DURING THE FISCAL YEAR.

The following promotions were made: Two lieutenant colonels to be colonels; 2 majors to be lieutenant colonels; 3 captains to be majors; 27 lieutenants to be captains.

The department has continued to hold preliminary examinations for appointment in the corps the second Monday in each month at San Francisco, Fort Sheridan, and Washington, D. C. During the fiscal year 41 applicants passed the preliminary examinatons. Of this number 26 attended the session of the Army Medical School which ended May 31, 1912, leaving 14 who will attend the next session of the school. A preliminary examination will be held on July 15, 1912, at various Army posts throughout the United States and at Ancon, Panama, to which 51 applicants have been invited. The last examination before the opening of the school will be held on Tuesday, September 3, 1912, and 22 applicants have already signified their intention of taking the examination at that time.

MEDICAL RESERVE CORPS.

On roster June 30, 1911		922
Appointed during the year		236
		1,158
Losses during year:		
Resigned	11	
Discharged	2	
Died	3	
Commissions vacated	[1] 37	
		53
On roster June 30, 1912		1,105

Of the 1,105 on roster June 30, 1912, 115 were on active duty and 990 on the inactive list.

On active duty June 30, 1911		138
Ordered to active duty during the year		39
		177
Relieved from active duty	18	
Commissions vacated	37	
Honorably discharged	2	
Resigned	4	
Died	1	
		62
On active duty June 30, 1912		115

The appointment of qualified candidates to vacancies in the junior grade in the Medical Corps has rendered it necessary to correspondingly reduce the number of officers of the Medical Reserve Corps on active service. In addition to the reduction shown in the above table, 20 officers of this corps have been notified that they will be returned to the inactive list October 1, 1912.

The advantages of having a reserve of officers who have been trained by active service with troops is obvious. In order that the number of men who have received such training may be as large as possible, it is the policy of this office to relieve from active service as rapidly as it can be done officers who have acquired experience and to replace them by others from the inactive list, these in turn being replaced by still others after a period of two years' active service.

CONTRACT SURGEONS.

In service, June 30, 1911	13
Contracts made during the year	5
Total	18
Contracts annulled during the year	7
Contracts in force, June 30, 1912	11

Of these contracts, 1 is temporary and 10 are on duty at arsenals, headquarters of military departments, and remount depots at pay ranging from $75 to $125 per month.

[1] Student officers at Army Medical School. The commissions were vacated by appointment in the Medical Corps.

DENTAL CORPS.

Number of dental surgeons in service, June 30, 1911	29
Resigned during the year	1
Number of dental surgeons in service, June 30, 1912	28
Acting dental surgeons in service, June 30, 1911	1
Appointed during the year	10
Total	11
Contracts annulled during the year	1
Acting dental surgeons in service, June 30, 1912	10

ARMY NURSE CORPS.

The authorized strength of the Nurse Corps is 125, and all vacancies which occur are promptly filled.

Nurses are assigned to the following stations: Letterman General Hospital, San Francisco, Cal.; Army General Hospital, Fort Bayard, N. Mex.; Army and Navy General Hospital, Hot Springs, Ark.; Walter Reed General Hospital, Takoma Park, D. C.; attending surgeon's office, Washington, D. C.; Fort Shafter, Honolulu, Hawaii; Division Hospital, Manila, P. I.; Fort William McKinley, Rizal, P. I.; Pettit Barracks, Zamboanga, Mindanao, P. I.

Nurses were assigned to the hospital at Fort William McKinley, P. I., in July, 1911, and were also assigned to Fort Shafter, Honolulu, Hawaii, in April, 1912. Requests for additional nurses have been received from the Army and Navy General Hospital, Hot Springs, Ark., and also from the hospital at Fort Shafter, Honolulu, Hawaii. A request for nurses to be assigned to the hospital at Fort Leavenworth, Kans., was received, which, with the present number in the corps, could not be granted.

An addition to the nurses quarters of the Walter Reed General Hospital, Takoma Park, D. C., is in process of building, and will add several bedrooms and a much larger kitchen. The general health of the nurses throughout the year has been excellent.

During the fiscal year 1911–12 there have been 586 applications for admission to the Army Nurse Corps. During the same period there have been 33 discharges, 58 appointments, and 3 reappointments. A tour of inspection was made by the superintendent of the Army Nurse Corps in June, 1912, which included all the hospitals of the United States where members of the Nurse Corps are stationed.

The enrolled nurses of the American Red Cross Nursing Service now constitute the reserve of the Army Nurse Corps, and in time of war or other emergency may with their own consent be assigned to active duty in the military establishment. Through the work done by the committees of the Red Cross and the American Nurses' Association this reserve has been increased from 2,000 to 3,000 during the past year. Twelve nurses from the Red Cross reserve were called into active service by the National Red Cross and assigned to duty at refuge camps in the flooded districts of Louisiana and Mississippi during the overflow of the Mississippi River in May and June. The promptness with which these nurses reported and the satisfactory character of their services demonstrated the value of the reserves in time of emergency.

HOSPITAL CORPS.

The authorized strength of the Hospital Corps is as follows:

Sergeants first class	300
Sergeants	350
Corporals	50
Privates first class and privates	2,800
Total	3,500
Strength June 30, 1911:	
Sergeants first class	285
Sergeants	333
Corporals	40
Acting cooks	195
Privates first class	1,270
Privates	1,330
Total	3,453
Gain July 1, 1911, to June 30, 1912:	
By enlistment and reenlistment	877
By transfer from the line	826
By return from desertion	100
Loss during same period:	
By discharge expiration term of service	1,133
By discharge by order	232
By discharge sentence general court-martial	104
By discharge certificates disability	50
By transfer to the line	41
By retirement	21
By death due to disease	12
By death due to accident	4
By suicide	1
Dropped	4
Deserted	158
Leaving in service June 30, 1912:	
Sergeants first class	262
Sergeants	341
Corporals	39
Acting cooks	200
Privates first class and privates	2,654
Total	3,496

About 13 per cent of the total loss to the corps was by discharge by purchase to accept positions in civil life, and as a number of these men so discharged again enlisted for the Hospital Corps at stations other than those from which they were discharged, it is evident that the privilege of discharge by purchase is, so far as members of the Hospital Corps are concerned, being abused.

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ARMY MEDICAL SCHOOL.

[Commandant, Col. Louis A. La Garde, Medical Corps, United States Army; secretary, Maj. C. R. Darnall, Medical Corps, United States Army.]

The sixteenth session of the Army Medical School began October 1, 1911, and closed May 31, 1912. The number of accepted candidates appointed in the Medical Reserve Corps and admitted to the school was 47. Thirty-nine of these completed the course and qualified on

final examinations. Six failed to pass the mid-term examination and were relieved from duty at the school by orders from the War Department; one resigned during the school term and one failed to pass the final examination at the end of the school term.

No officers of the Organized Militia were given permission to attend the course during this session because the large number of candidates for admission to the Medical Corps taxed the capacity of the school.

The course of instruction has varied but little from that of last year. The following table shows the subjects taught, the number of hours devoted to each, names of the instructors, and the value of the several subjects:

No.	Subject.	Hours of instruction.	Instructor.	Maximum.	Minimum.
1	Medical Department administration, duties of medical officers, and customs of the service.	104	Maj. Chas. R. Reynolds.....	1,000	800
2	Clinical microscopy and bacteriology.....	291	Maj. F. F. Russell, Capt. C. F. Craig, Capt. H. J. Nichols.	900	720
3	Military hygiene.....	24	Maj. P. C. Fauntleroy.....	800	640
4	Military surgery.....	18	Col. L. A. La Garde.	800	640
5	Military and tropical medicine.....	20	Lieut. Col. W. D. McCaw...	800	640
6	Sanitary chemistry.....	147	Maj. C. R. Darnall.....	600	480
7	Hospital Corps drill.....	70	Capt. W. A. Wickline.....	500	400
8	Operative surgery.....	27	Capt. Wm. A. Duncan.....	400	320
9	Ophthalmology and optometry.....	64	Maj. P. S. Halloran, Capt. Wm. T. Davis	400	320
10	Radiography.....	28	First Lieut. Henry Beeuwkes.	300	240

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ORGANIZED MILITIA.

The following is an extract from a report furnished this office by Capt. Henry D. Thomason, Medical Corps, United States Army, who was, in July, 1910, detailed for duty in the office of the Chief, Division of Militia Affairs, War Department:

* * * I reported for duty in the office of the Chief, Division of Militia Affairs, and was placed in charge of matters pertaining to the organization, equipment, and instruction of the sanitary personnel of the Organized Militia of the United States. Previous to this time the Chief, Division of Militia Affairs, had but one assistant, a line officer. It had been found that problems involving sanitary service and medico-military affairs in the Organized Militia were assuming more and more importance. Such of these as could not be intelligently handled by the line officer assistant were referred to the office of the Surgeon General of the Army, but it soon became apparent that the volume of work pertaining to sanitary troops in the Organized Militia had increased to such proportions that, in justice to both the War Department and the Organized Militia, it seemed necessary to detail a medical officer of the Army who could devote his entire time to this branch of the service.

The prime object was to prepare, train, and equip the sanitary troops of the Organized Militia of the United States for field service, the object in view being a possible call into the service of the Federal Government as provided by law, and by this training and preparation enable them to take their place with efficiency with the first line of defense of the country. It is for the purpose of this field efficiency that the Organized Militia of each State and Territory, proportionately to its congressional representation, is annually allotted from Federal funds under Section 1661, Revised Statutes, $2,000,000 for arms, equipments, camp purposes, and promotion of rifle practice, and under Section 13 of the Militia law, proportionate to the enlisted strength of each State, Territory, and District of Columbia, is an additional allotment of $2,000,000 for supplies and ammunition, each of these allotments independent of special appropriations made bi-annually for encampments and maneuvers.

In order to meet the first requirement in efficiency for the sanitary troops, it was recognized that an adequate personnel in numbers was essential. Most of the States were not only lacking in strength of personnel, but in organization, equipment, and instruction. General Orders, No. 35, War Department, 1910, provided for an organization designated as the "First Field Army." This consisted of Regulars and Organized Militia stationed within the limits of the State of New York and the New England States. This order contemplated a field army of three divisions.

It was found that, had this field army been mobilized (as was at one time contemplated for purposes of instruction), there would have been a deficiency of all auxiliary troops, but the most glaring shortage would have been in the sanitary service. In the year 1910, instead of having, as provided in Field Service Regulations, 12 ambulance companies and 12 field hospitals to meet the requirements of this Field Army, the records of the Division of Militia Affairs showed that there would have been available for this concentration only one field hospital (New York) and one ambulance company (called an ambulance company section, of Massachusetts). To show the progress that has been made, if this Field Army were concentrated at the present writing, there would be available in the Organized Militia within this territorial boundary, five ambulance companies and five field hospitals. If other field armies had been prescribed covering other territorial districts at the time General Orders, No. 35, was promulgated, this showing of the sanitary service would have been materially less, for outside of the territorial limits of the First Field Army, but two ambulance companies and one field hospital existed in the Organized Militia. At the present time the Organized Militia could provide outside the territorial limits of the First Field Army, 11 ambulance companies and 15 field hospitals.

The status of the sanitary service of the Organized Militia at the beginning of the fiscal year 1910–11 was at a low standard so far as organization was concerned; also its equipment (barring exceptional instances) was likewise very deficient, and systematic instruction had hardly begun. It received its initial impetus at the camps of instruction for medical officers conducted in 1909 at Antietam and Sparta. At the joint maneuvers of 1910, when medical officers of the Army were liberally supplied as inspector-instructors to the Organized Militia and the sanitary units of the Army were sent out as object lessons to demonstrate their important function and duties in camp, combat, and on the march, a general awakening and improvement in the sanitary service throughout the Organized Militia has been apparent.

As a result of the frequent instruction imparted to medical officers and enlisted men of the Hospital Corps belonging to the Organized Militia by the Medical Department of the Army, in camp, in armories, special and correspondence schools, there is now a nucleus well posted in camp sanitation, tactical problems pertaining to the medical service in war, knowledge of administration, and all other functions devolving upon the military sanitary srevice. All this will prove a valuable asset to the Government in the event the Organized Militia is called into the Federal service.

The Field Service School for medical officers at Fort Leavenworth, Kans., authorized by General Orders, No. 132, War Department, 1910, conducted its first course beginning April 1 and terminating May 11, 1912. Five of the seven medical officers of the Organized Militia authorized to attend completed the course and received their certificates of proficiency, which are on record in the War Department. It is hoped that authorization will be given for the attendance of a larger number of medical officers of the Organized Militia at the next annual session of the school. Within the last fiscal year there have also been received a number of applications by medical officers of the Organized Militia to attend the course at the Army Medical School in Washington, D. C. Owing to the large classes in this school, composed of candidates for the Medical Corps of the Army, these applications have had to be disapproved, but it is hoped that in the very near future the opportunities of this school will be made available for medical officers of the Organized Militia.

As the sanitary personnel and the sanitary units in the Organized Militia have so materially increased within the last two years, and prospects are favorable for a continued growth, it is believed the time has arrived when the assignment of a few permanent inspector-instructors from the Medical Corps of the Army, and sergeant-instructors from the noncommissioned officers of the Hospital Corps, will be of distinct advantage on lines now provided for the Calvalry and Field Artillery of the Organized Militia. It is also believed that the resulting increased efficiency and the returns to the Federal Government would more than compensate the cost. Legislative enactment of Federal pay for the Organized Militia will, when it becomes operative, bring this important body for national defense into still closer relations with the regular establishment, and the responsibility rests with the Medical Department of the Army to exert every effort to render the sanitary troops of the Organized Militia an efficient and dependable organization.

The following table shows the increase in sanitary personnel and units in the Organized Militia from June 30, 1910, to June 30, 1912:

State.	Medical officers.		Enlisted men.		Field hospitals.		Ambulance companies.		Hospital Corps detachments.	
	1910	1912	1910	1912	1910	1912	1910	1912	1910	1912
Alabama	7	11	16	35					1	3
Arizona	3	4	1	1					1	
Arkansas	15	17		21						
California	14	18	43	55					4	6
Colorado	8	11	24	31					1	2
Connecticut	12	21	49	69		1		1	4	2
Delaware	1	2	8	10					1	1
District of Columbia	11	11	50	40				1	1	
Florida	9	10	9	25					1	1
Georgia	18	19	18	46					4	6
Hawaii	4	3	50	32					1	1
Idaho	5	7	5	21					1	1
Illinois	44	49	157	167		1			10	10
Indiana	16	20	50	95		1		1	2	2
Iowa	13	20	65	87		1			4	4
Kansas	8	7	21	24					2	1
Kentucky	11	17		33		1				
Louisiana	5	10	30	36					2	1
Maine	7	24	26	48					2	2
Maryland	13	17	24	35					1	1
Massachusetts	29	39	110	123		1	1	1	1	
Michigan	19	23	55	119		1		2	3	
Minnesota	17	17	30	35					4	4
Mississippi	14	10		28		1				
Missouri	20	28	89	48	1	1		2	5	
Montana	3	4	2	19					1	1
Nebraska	15	16	25	38		1			1	
New Hampshire	8	8	22	43					2	2
New Jersey	30	30	77	93		1			5	5
New Mexico	3	10		18						2
New York	115	100	411	438	1	2		3	23	28
North Carolina	11	18	23	102		1		1	2	2
North Dakota		5		23						1
Ohio	49	52	46	197		2	1	2	1	
Oklahoma	4	4	24	31		1			1	
Oregon	8	15	49	42			1	1	1	
Pennsylvania	55	58	143	136					13	13
Rhode Island	9	10	27	39		1			1	
South Carolina	7	13	33	47					3	3
South Dakota	2	6		8						1
Tennessee	11	17	26	90		1		1	3	3
Texas	16	15	20						1	
Utah	4	4	10	10					1	1
Vermont	2	3	10	24					1	1
Virginia	12	15	24	42					3	
Washington	6	6	32	30		1			1	
West Virginia	9	7	24	23					1	1
Wisconsin	15	14	40	42					3	3
Wyoming	3	4	12	14					1	3
Total	720	841	2,010	2,813	2	20	3	16	125	118

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MEDICAL AND HOSPITAL SUPPLIES.

The appropriation made by Congress for the fiscal year 1912 for the support of the Medical Department was $700,000, this being the amount asked for in the estimates submitted by the honorable the Secretary of War.

The aim of the department to increase steadily the quantity of field supplies in store for use in active campaign has been followed in so far as possible during the past year, and progress has been made

in the collection of additional items of this nature. The amount expended for field supplies during this year was $143,152.29.

Medical supply depots have been maintained at the same points at which they were maintained during the previous fiscal year, and the service of supply has been very satisfactorily met.

Supplies to the value of $77,929.76 were issued to the Philippines during the year.

Experiments have been made in the matter of motor ambulances, and four were obtained with the commercial truck chassis with a view to carrying out the policy outlined in the last report of providing a standard commercial truck on which the ambulance body might be mounted. In this endeavor it is realized that the department erred on the side of strength and durability, and secured trucks which were too heavy for the apparatus contemplated. It is believed, however, that the experience gained in this matter is of great value; the trucks are of superior type, and can be turned over to the Quartermaster's Department for use in ordinary trucking work. A truck of medium weight will be procured during the present year, and it is thought that a more satisfactory result will be obtained.

Very satisfactory results have attended the efforts to provide portable X-ray machines, and the department is now in possession of three sets of apparatus of this type, and has arrived at a very fair determination as to what this apparatus should embody to produce excellent radiographic results from machines of portable type.

The packsaddle for field transportation of medical supplies is proving to be most satisfactory, and the department is now in possession of approximately 300 of these appliances for issue to such units of the Medical Department field equipment as may require the saddle in field service.

It is thought that steady advance has been made in the quality and variety of medical and surgical supplies for use both in field and post service, and the progress of specialization in the medical sciences has been amply met by the provision of apparatus suitable to the prosecution of the specialties, etc.

During the fiscal year 1912 serviceable Army medical stores were transferred to other branches and instrumentalities of the Government and issued or sold to States for the use of the Organized Militia and to civilians with the Army in the total amount of $99,533.10, as shown by the records of this office on June 30, 1912. Of this amount, $75,030.22 had on or before June 30 been placed to the credit of the replacing fund established by the act approved June 12, 1906 (34 Stats., 256), and the balance of $24,502.88 outstanding was then in the course of settlement. All of this sum will be available during the fiscal year 1913 to obtain a new supply of such stores in place of those so transferred, issued, and sold.

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ARMY MEDICAL MUSEUM.

The total number of specimens in the museum at the close of the fiscal year June 30, 1912, is 34,598.

The following statement shows in detail the additions and changes in the different sections:

Pathological section:		
In museum June 30, 1911		12,989
Discarded	39	
Donated	10	
		49
		12,940
Received during the year		44
In museum June 30, 1912		12,984
Anatomical section:		
In museum June 30, 1911		1,186
Discarded	1	
Donated	4	
		5
		1,181
Received during the year		16
In museum June 30, 1912		1,197
Section of comparative anatomy:		
In museum June 30, 1911		693
Discarded	22	
Donated	48	
Transferred	4	
		74
In museum June 30, 1912		619
Microscopical section:		
In museum June 30, 1911		12,916
In museum June 30, 1912		12,916
Miscellaneous section:		
In museum June 30, 1911		3,380
Donated		1
		3,379
Received during the year		313
In museum June 30, 1912		3,692
Provisional pathological section:		
In museum June 30, 1911		368
Discarded		93
In museum June 30, 1912		275
Provisional anatomical section:		
In museum June 30, 1911		371
In museum June 30, 1912		371
Photographic section:		
In museum June 30, 1911		2,544
In museum June 30, 1912		2,544
Recapitulation:		
In museum June 30, 1911		34,447
Discarded, donated, and transferred		222
		34,225
Added during the year		373
In museum June 30, 1912		34,598

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ARTIFICIAL LIMBS AND APPARATUS.

Under laws relating to artificial limbs and apparatus, or commutation therefor, orders on manufacturers were given during the fiscal year for 94 artificial legs, 1 foot, and 5 arms. Commutation certificates were issued for 1,557 cases of amputated leg, 1,569 of amputated arm, 40 of amputated foot, and 1,777 cases of loss of use of limb.

Under the act of June 17, 1870, and subsequent amendments thereto, 23,527 disabled soldiers and sailors have been furnished artificial limbs or apparatus, or have received commutation in money since the passage of the act, as follows: Total number benefited to June 30, 1912, 23,527; died, 13,851; dropped from rolls, 592; rejected after one or more payments, 571; remaining on rolls at end of fiscal year, 8,513, being a loss of 893 beneficiaries during the year.

It is estimated that the sum of $85,000 will be required to pay the claims coming due during the fiscal year ending June 30, 1914.

Very respectfully,

GEORGE H. TORNEY,
Surgeon General, U. S. Army.

The SECRETARY OF WAR.

REPORT OF THE PAYMASTER GENERAL.

WAR DEPARTMENT,
OFFICE OF THE PAYMASTER GENERAL,
Washington, August 31, 1912.

SIR: I have the honor to submit the following report for the fiscal year ended June 30, 1912:

On July 1, 1911, officers of the Pay Department were charged with public funds aggregating	$3,639,446.89
During the fiscal year they received:	
From the United States Treasury	47,463,571.50
From soldiers' deposits	1,814,021.82
From Army paymasters' collections	879,784.54
Total balances and receipts	53,796,824.75
Accounted for as follows:	
Expended on account of pay of the Army	45,593,819.20
Expended on account of mileage to officers and contract surgeons	612,274.23
Expended on account of Army War College	9,657.26
Expended on account of pay of Military Academy	642,061.86
Expended on account of soldiers' deposits	1,753,860.43
Expended on account of encampment and maneuvers, Organized Militia	94,018.14
Total expenditures	48,705,691.12
Surplus funds deposited to credit of United States Treasurer	227,596.84
Soldiers' deposits deposited to credit of United States Treasurer	1,814,021.82
Army paymasters' collections deposited to credit of United States Treasurer	879,784.54
Balance charged to officers June 30, 1912	[1] 2,169,730.43
Total accounted for	53,796,824.75

[1] The balance of $2,169,730.43 charged to officers on June 30, 1912, was needed for the muster of June 30, 1912, to be paid during the month of July.

The appropriation for the pay of the Army and the Military Academy, for expenses of the Army War College, and allotment of funds for the payment of the militia under section 15 of the act of January 21, 1903, amounted to $45,276,635.55 for the fiscal year 1912. The gross accountability involved in the transactions of the disbursing officers and special disbursing agents is shown by the table hereafter appearing in this report. Detailed statements of the transactions of all officers in this department are appended hereto. The payments to the Army in the United States and in our outlying possessions have been made with the utmost promptness, and it is a pleasure to commend the paymasters, the special disbursing agents of the Pay Department, and the Army paymasters' clerks for their faithfulness in the various duties intrusted to them. Owing to a deficiency in the appropriation for the pay of the Army for the fiscal year 1912, the troops in the United States, with few exceptions, were not paid on the muster to June 30, 1912, until after August 24, 1912, the date on which funds were made available by the passage and approval of the general deficiency bill.

ALLOTMENTS.

During the period July 1, 1911, to June 30, 1912, there was disbursed $543,315.34 in payment of allotments made by enlisted men of the Army. The total number of allotments in force on June 30, 1912, was 4,244.

BENEFICIARIES.

The act of Congress approved May 11, 1908, as amended by an act approved March 3, 1909, provides for the payment of a gratuity of six months' pay to the widow or designated beneficiary of any officer or enlisted man on the active list of the Army who dies from wounds or disease not the result of his own misconduct. The law further provides that from this gratuity there shall be deducted and turned over to the Quartermaster's Department the expenses of interment contracted by the Government, not exceeding $75 in the case of an officer and $35 in the case of an enlisted man. The rate of the gratuity is the actual rate of pay, as distinguished from allowances, to which the officer or enlisted man was entitled at date of death.

During the period from July 1, 1911, to June 30, 1912, payments were made to the beneficiaries of 18 officers, aggregating $32,242.25, and of 215 enlisted men, aggregating $32,716.70, making a total disbursed of $64,958.95. These payments were made with the utmost promptness.

CLERKS, PAYMASTER GENERAL'S OFFICE.

The success of this office is largely due to the faithful labors of the clerks, and I wish to commend them for the efficient manner in which they have performed their several duties during the fiscal year 1912.

I am in hearty sympathy with the present movement which has for its object the retirement of clerks with reasonable compensation after they have reached an age which incapacitates them for the performance of their full duties.

MILITIA.

Under section 15 of the act of January 21, 1903, as amended, militia organizations of the several States and Territories and the District of Columbia participating in operations at maneuver camps or in joint exercises at lake or seacoast defenses are paid by the Pay Department from funds specifically appropriated by Congress for such purpose.

There was disbursed for the pay of militia organizations participating between July 1, 1911, and June 30, 1912, a total of $95,555.96, pertaining to the appropriations "Encampment and maneuvers, Organized Militia, 1909–1911," $140.73; "Encampment and maneuvers, Organized Militia, 1910–1912," $1,678.04, and "Encampment and maneuvers, Organized Militia, 1911–1913," $93,737.19.

The records show that payment was made to 753 officers and 5,936 enlisted men.

The payment of these militia organizations was promptly made by Army paymasters who were on duty at various places of joint exercises for the purpose of making disbursements and giving instruction relative to the preparation and extension of pay rolls.

SOLDIERS' DEPOSITS.

The subjoined table sets forth deposits and repayments for the fiscal years since the system was established.

Number and amounts of deposits received from and repaid to soldiers on discharge from July 1, 1872, to June 30, 1912.

Fiscal years ending June 30—	Deposits received.		Deposits repaid.		
	Number.	Amount.	Number.	Principal.	Interest.
1873	.....	$209,850.38	.....	.....	.....
1874	.....	346,609.56	.....	.....	.....
1875	.....	325,255.80	.....	.....	.....
1876	.....	435,912.68	.....	.....	.....
1877	5,524	328,585.05	14,752	$1,041,001.57	$49,713.89
1878	5,524	346,243.94	3,182	145,667.91	88,420.24
1879	6,087	470,770.38	4,926	257,854.48	17,706.93
1880	8,635	477,174.44	8,084	392,568.93	30,680.97
1881	8,942	524,112.72	8,148	501,949.77	38,722.62
1882	6,890	448,561.83	7,570	428,482.44	31,658.73
1883	7,902	407,544.68	6,695	363,578.34	26,123.60
1884	7,114	389,267.55	8,184	404,291.57	31,124.93
1885	7,033	427,617.90	6,930	401,902.22	38,249.44
1886	7,261	469,031.55	7,835	490,506.79	46,583.23
1887	6,889	436,574.98	6,988	389,083.12	34,758.24
1888	7,409	386,944.10	6,346	323,952.97	29,327.01
1889	7,892	383,798.34	7,664	396,468.53	33,647.38
1890	7,634	395,128.82	7,206	411,039.74	41,596.60
1891	6,790	403,473.15	9,106	553,047.45	51,797.70
1892	5,570	334,464.70	8,019	410,873.15	38,894.26
1893	5,870	282,248.04	5,317	268,835.46	26,059.07
1894	5,914	361,830.76	5,786	290,088.98	27,014.32
1895	6,284	318,270.73	5,880	308,372.45	28,766.42
1896	8,778	420,338.87	6,486	359,200.43	38,614.66
1897	17,878	535,392.64	6,976	345,559.55	34,850.53
1898	21,856	613,513.51	17,377	561,518.64	45,815.61
1899	37,842	1,496,762.31	28,508	988,774.63	61,273.95
1900	91,461	3,215,544.66	27,571	1,028,146.34	43,234.89
1901	111,004	3,438,529.11	78,948	2,955,169.39	114,750.37
1902	80,833	2,660,250.66	129,271	3,708,820.19	190,957.77
1903	61,948	1,888,014.37	59,968	2,134,191.91	123,298.48
1904	59,970	1,585,687.60	62,198	1,838,105.64	107,032.95
1905	51,382	1,531,019.80	74,352	2,010,526.80	122,205.52
1906	54,266	1,495,228.04	35,899	1,168,236.62	70,112.93

Number and amounts of deposits received from and repaid to soldiers on discharge from July 1, 1872, to June 30, 1912—Continued.

Fiscal years ending June 30—	Deposits received.		Deposits repaid.		
	Number.	Amount.	Number.	Principal.	Interest.
1907	61,908	$1,572,204.04	46,096	$1,203,746.47	$68,879.02
1908	50,896	1,676,708.68	69,120	1,902,552.80	124,029.82
1909	60,385	1,861,198.53	48,831	1,450,391.08	85,267.64
1910	66,423	1,879,469.29	47,417	1,503,898.33	83,991.90
1911	61,841	2,095,642.09	84,250	2,417,811.27	142,999.61
1912	58,556	1,814,021.82	59,898	1,789,073.72	100,654.61
Total		38,688,798.16		35,145,289.68	2,268,815.84

NOTE.—Repayment of deposits to soldiers from July 1, 1872, to June 30, 1876, were not recorded by fiscal years. The repayments of 1877 include all deposits repaid prior thereto.

The above table gives a complete history of soldiers' deposits since the passage of the act authorizing them, May 15, 1872.

Amount remaining to credit of depositors, $3,543,508.48.

* * * * * * *

Respectfully submitted.

GEORGE R. SMITH,
Paymaster General, U. S. Army.

The SECRETARY OF WAR.

REPORT OF THE CHIEF OF ORDNANCE.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ORDNANCE,
Washington, September 1, 1912.

SIR: I have the honor to submit the following report on the principal operations of the Ordnance Department during the past fiscal year, together with certain remarks as to its interests and necessities.

PERSONNEL.

Since the date of my last annual report one officer, Col. S. E. Blunt, has been retired from active service, at his own request, after 44 years' service. One officer was relieved from duty in the department at his own request, and 8 officers have left the department by reason of expiration of detail in it. One officer with previous service in the department has been redetailed in it, and 11 new officers have been detailed. The total strength of the department in officers at the date of my last annual report was 80. This strength at present is 82, a gain of 2. The full authorized strength is 85. Of the 11 officers entering the department on their first detail, 2 came from the Field Artillery, 5 from the Coast Artillery, and 2 each from the Cavalry and Infantry.

FISCAL AFFAIRS.

The statement giving the receipts and expenditures of the Ordnance Department under general headings for the fiscal year of 1912 is herewith submitted in tabular form, so as to show the data under

the various appropriations made for the service of this department, including those for experiments conducted under the direction of the Board of Ordnance and Fortification, and for the purchase of submarine mines, the control of which rests with the Chief of Coast Artillery.

The tables constituting the statement show that on July 1, 1911, there was in the treasury and in the possession of disbursing officers the sum of $15,132,575.54.

* * * * * * *

The total amount of the appropriations for the fiscal year 1912, including those contained in the act making appropriations for fortifications and other works of defense, approved June 6, 1912, was $7,388,758.02. The total amount with which the appropriations were credited in accordance with authority of law from sales, transfers, etc., was $2,594,278.70. The total payments made by disbursing officers and by Treasury settlements during the year amounted to $10,764,514.93. The total sales of condemned stores during the year amounted to $205,037.10, all of which was credited on the books of the Treasury Department to "Ordnance material (proceeds of sales)." The total sales to other parties covered into the Treasury Department to the credit of the fund "Miscellaneous receipts" amounted to $11,552.88. The total amount to the credit of disbursing officers on June 30, 1912, was $1,726,385.21, and the total amount in the Treasury on the same date was $12,241,366.82.

FUNDS ON HAND AT THE BEGINNING AND CLOSE OF THE FISCAL YEAR.

The principal amounts on hand at the beginning of the year pertained to the following appropriations:

Ordnance stores and supplies, 1911 and 1912	$419,271.18
Replacing ordnance and ordnance stores:	
1910 and 1911	456,204.19
1911 and 1912	1,158,475.48
Manufacture of arms, 1911 and 1912	872,188.58
Field artillery for Organized Militia	392,910.15
Armament of fortifications	5,041,438.26
Fortifications in insular possessions	2,335,696.81

The status of these appropriations at the close of the fiscal year will be seen by reference to the tabular statement.

The principal amounts on hand at the close of the fiscal year pertained to the following appropriations:

Ordnance stores and supplies, 1912 and 1913	$447,362,54
Replacing ordnance and ordnance stores:	
1911 and 1912	450,080.87
1912 and 1913	1,419,233.22
Manufacture of arms, 1912 and 1913	498,717.61
Field artillery for Organized Militia, 1911–1913	634,576.16
Armament of fortifications	4,815,818.09
Fortifications in insular possessions	1,553,049.32

The above amounts under the appropriations "Armament of fortifications" and "Fortifications in insular possessions" include the sums of $2,015,000 and $336,085, which had been appropriated at the last session of Congress, respectively. Under the law these appropriations are available on the approval of the act making them and until used.

The balances under the fund "Replacing ordnance and ordnance stores, 1912 and 1913," and the appropriation "Manufacture of arms, 1912 and 1913" are available for the fiscal year 1913.

Of the above amounts reported on hand at the close of the fiscal year the greater portion in nearly every case had been allotted to meet outstanding obligations. The available balances under the above-named appropriations at the close of the fiscal year are as follows:

Ordnance stores and supplies, 1912 and 1913	$990.69
Replacing ordnance and ordnance stores, 1912 and 1913	52,055.16
Manufacture of arms, 1912 and 1913	104,088.74
Armament of fortifications	1,442,676.89
Fortifications in insular possessions	443,946.73
Field artillery for Organized Militia, 1911–1913	33,859.23

It will be seen in the case of the above-named appropriations that they were largely obligated at the close of the fiscal year, except in the case of the appropriations which had been made and increased at the preceding session of Congress.

TRANSFERS AND SALES OF SERVICEABLE ORDNANCE STORES.

The value of ordnance stores transferred to the executive departments and the Organized Militia is refunded to ordnance appropriations by Treasury settlements, and the funds received become available the year in which their disposition is effected and remain so during that and the following year for replacing the stores so transferred. The total value of the stores thus transferred amounted to $2,481,777.60. Of this amount $939,382.69 was on account of transfers to the Navy Department, $255,115.29 on account of transfers to the Marine Corps, $505,318.50 on account of transfers to other executive departments, and $781,961.12 on account of transfers to the Organized Militia. In conducting experiments for the Board of Ordnance and Fortification the value of the ordnance stores which were used in them amounted to $13,253.68, all of which was refunded to ordnance appropriations.

The total of the transfers and sales amounted to $2,594,278.70, which is 35 per cent of the total amount appropriated for the use of this department in arming, equipping, and supplying the Regular Army.

PAYMENTS.

The total payments made by disbursing officers amounted to $10,521,370.85 and by Treasury settlements to $243,144.08, a total of $10,764,514.93. The appropriations proper for the year amounted to $7,388,758.02. By reason of the procurement of ordnance stores to replace articles transferred or sold to other departments, etc., the disbursements were about 45 per cent in excess of the appropriations.

The amounts of disbursements made at the principal arsenals and in the Ordnance Office during the fiscal year are as follows:

Frankford Arsenal	$2,325,859.23
Rock Island Arsenal	2,491,596.46
Springfield Armory	1,080,735.91
Picatinny Arsenal	693,107.39
Watervliet Arsenal	308,192.45
Watertown Arsenal	944,943.86
Ordnance Office	1,883,196.15

AMOUNTS COVERED INTO THE SURPLUS FUND.

The principal amounts covered into the surplus fund of the Treasury were:

Ordnance service, 1910	$2,940.80
Ordnance stores and supplies, 1909 and 1910	2,946.42
Small-arms target practice, 1909 and 1910	1,544.32
Repairs of arsenals, 1910	1,439.35
Manufacture of arms, 1909 and 1910	4,791.18

COMPARISON OF THE FISCAL STATEMENT WITH THAT OF THE PRECEDING YEAR.

Comparing the fiscal statement with that of the preceding year it will be found that the amount of the appropriations was decreased from $9,210,554.60 to $7,388,758.02, a decrease of $1,821,796.58; the amount of disbursements increased from $10,696,166.24 to $10,764,514.93. The amount received from transfers to the executive departments and the Organized Militia increased from $1,600,755.54 to $2,481,777.60. The amount available for disbursement at the close of the fiscal year decreased from $15,132,575.54 to $13,967,752.03, a decrease of $1,164,823.51.

SCIENTIFIC MANAGEMENT.

In my report for the fiscal year ended June 30, 1911, the subject of the application of more scientific management to the plants of the Ordnance Department was discussed at some length, and a detailed statement of the reasons that determined the trial, the extent to which the system had been introduced, the conditions under which it would be retained or extended, and the results already obtained were given.

During the past year the subject has received even greater public attention than before, so that it is deemed proper to describe the progress made and the conditions that have developed since my last annual report in greater detail than would otherwise be considered necessary.

The occurrence of the brief strike among the molders at the Watertown Arsenal, mentioned in my last annual report, was represented by the outside labor interests which had supported the strike and were encouraging opposition to the introduction of scientific management in the plants of this department as indicating the existence of unsatisfactory conditions, due to the use of the particular system of management under trial, known as the "Taylor system." The representations made induced the House of Representatives to appoint a special committee to investigate the Taylor and other systems of shop management. While the resolution authorizing the appointment of the committee provided for the investigation of other systems, it specifically named the Taylor system and directed that the applicability of this system to Government works, its effect on the health and pay of employees, and on wages and labor cost be ascertained. The special committee thus appointed began its labors on October 4, 1911. The members visited the Watertown Arsenal and held hearings there, at Boston, New York, and Washington, covering a period between October 4, 1911, and February 12, 1912.

Ample opportunity was afforded to all Government officers and employees, outside labor leaders and workmen, industrial engineers, civilian managers, and generally to anyone interested in the subject, to present their views to the committee. In short, the committee went into the subject thoroughly and had presented to it in great detail all the information needed for an exhaustive study and the formation of an authoritative conclusion. The committee made its report to the House on March 9, 1912, and it was unanimous. Inasmuch as the opponents of the Taylor system had virtually concentrated their attack upon the time-study and premium features under trial at the Watertown Arsenal, claiming that those features operated against the health and well-being of the employees, it is particularly interesting to note what the committee, as the result of its investigation, had to say upon the points especially affected by those features. Their remarks were as follows:

> Neither the Taylor system, the Emerson system, the Gantt system, the Brombacher system, the Stimpson system, nor any of the systems of so-called scientific management have been in existence long enough for your committee to determine with accuracy their effect on the health and pay of employees and their effect on wages and labor cost. The conclusions we have arrived at are all based upon what we consider to be the logical sequence of the conditions existing or proposed. The selection of any system of shop management for the various Government works must be to a great extent a matter of administration, and your committee does not deem it advisable nor expedient to make any recommendations for legislation upon the subject at this time.

In other words, the committee, properly zealous to protect the well-being of the employees, failed to find any ground in the representations made by the opponents of the system upon which to base condemnation or serious criticism of the methods in effect or contemplated by this department, or any conditions which called for remedial legislation, although it showed its alert interest in the well-being of the workmen by mentioning and condemning many oppressive practices, which it did not find, and did not say it had found, at the arsenals of this department. This result should be sufficient to stay the campaign against the use of the Taylor system by the Government, which, on the part of its opponents, has been principally one of misrepresentation of the purposes sought, and unjustified assertions as to the results which it would produce, at least until bad conditions become a fact instead of a mere prediction. Particularly have these opponents endeavored, by quoting carefully selected and therefore misleading extracts from the writings of its original advocate, to create a popular prejudice against the time-study and premium features of this system, alleging that these features are only devices for "speeding up" the workman and reducing him ultimately to the level of a "machine" or "beast of burden." The persistency with which these statements have been circulated, in the face of the failure of the committee to discover any facts which justify them, excites more than a suspicion that there is some other reason which animates the opposition than a fear that the employees of the department are going to be overworked. The following instance, which occurred at the Watertown Arsenal, well illustrates the fact that the time study is not an instrument of oppression, but that the determination of the proper quantity of work revealed by its use is advantageous to the workman as well as to the Government, and that the department intends to act justly upon the information thus obtained. After a

time study had been made on a piece of work, the workman proceeded to earn a good premium, but upon comparing the cost of the work to the Government before and after the premium system of payment, it was discovered that the cost was greater afterwards than before. That is, there was no saving of time and overhead charges to compensate for the increased amount paid to the workman. The reason was that this was an exceptionally fast and skillful man, and that he had been all along giving an output corresponding to a reasonable task time without getting paid for it. In other words, he was underpaid. The time study disclosed this, and he is now being paid in accordance with his merits.

In spite of the well-grounded conclusion reached by the committee that no legislation is needed at present, interests outside of the Government service have, nevertheless, succeeded in having bills introduced into both Houses of Congress which aim to prohibit the taking of accurate time studies of operations and the payment of premiums, or extra pay, to the workman. The effect of these bills, if enacted into law, would be to deprive the workmen of all material advantages that scientific management offers them. The attitude of the department is that improvement in industrial conditions should benefit both employer and employee. This attitude is clearly evidenced by the record that the department has made in its dealings with its employees and was given positive expression in my testimony before the special committee last January. To prevent any misunderstanding upon this point, it is considered fitting to quote that portion of the hearings which contains the expression referred to:

Mr. TILSON. There is another question I would like to ask in regard to the system. If, after a fair trial of the second part, as we have called it, of this Taylor system, at Watertown Arsenal, it should be found that it does not work satisfactorily to both the Government and the men, after a fair trial, so it could not be claimed on either side that it had not had a fair trial, it should be discovered that it could not be installed satisfactorily to the workmen themselves and to the management, do you believe that it would be installed at the other arsenals, regardless of that fact?

Gen. CROZIER. No, sir; it would not be my intention to install it at the other arsenals under those circumstances.

Mr. FITZGERALD. Would it mean the elimination of that feature at the Watertown Arsenal?

Gen. CROZIER. Yes, sir; it would.

Mr. FITZGERALD. In its entirety?

Gen. CROZIER. Of this second part of the system?

Mr. TILSON. Any part which did not work satisfactorily.

Gen. CROZIER. I would not permanently continue any system that was the cause of continued discontent.

Mr. TILSON. You regard the workmen at the Watertown Arsenal as fair-minded men—the majority of them—men who as between man and man would wish to be fair. Now, after giving it a fair trial with these men, if it engendered constant strain and you could not make any satisfactory arrangement with this system, would it not discourage it in your eyes?

Gen. CROZIER. Yes, sir; it would. After I shall have given it a fair trial, then I shall know everything about it of my own knowledge.

Mr. FITZGERALD. Of course, there are some features that might remain after this second part of the system was presumed to have been abolished, like the time records, for instance. Would workmen be required to still maintain the time as determined by the time-study methods of this system?

Gen. CROZIER. I think I have covered that when I say that I would not continue anything that produced permanent discontent.

Mr. TILSON. The system or any part of it?

Gen. CROZIER. No, sir.

Mr. TILSON. I just wanted to be sure of what you said, General. I simply wanted it reiterated, that is all.

Gen. CROZIER. Anything that produced permanent dissatisfaction and discontent would be given up. We desire to have our relations with the workmen harmonious.
Mr. TILSON. That's the point."

These expressions should not be misinterpreted. They do not mean that any feature deemed beneficial will be given up immediately upon the request of employees, without investigation of the grounds and reasons for such a request. Before the abandonment of a feature is decided upon it must be demonstrated that those objecting to it have worked under it long enough to understand it thoroughly, that their objections are material and based upon their own experience rather than the suggestions of others, and that they represent in number more than the small discontented element that exists in all industrial organizations.

The time study affords the most accurate measure yet devised for determining the just quantity of work that should be performed without overexertion, and the premium system is one of the means by which this just quantity of work can be adequately paid for. The combination of the two secures increased earnings to the competent workman, without a corresponding decrease to the less competent, a positive and material step forward which it would seem should meet with general approval. The proposed bills, however, take away this advantage, and require the workman to continue to labor under the old conditions, the unsatisfactory and inadequate character of which is evidenced by the symptoms of general unrest occurring throughout the industrial world.

The advocates of these bills profess to foresee that the time study and premium features will produce conditions inimical to the workman, and draw a harrowing picture of a future in which the overwrought workman is laboring feverishly to accomplish daily a task beyond his strength in return for a wage no greater, and perhaps less, than he formerly received. The absurdity of the supposition that such a state of affairs in a plant belonging to this Government would be tolerated by the people, or that there is any incentive which would lead sane Government officials to attempt anything of the sort, does not seem to strike these prophets. Neither do they appear to comprehend the fact that the determination of the rate of wages to be paid is a matter wholly independent of any system of management. The Taylor system has no occult power to force workmen to work under unsatisfactory conditions or for an inadequate wage. It does not take away from the workmen any weapon of self-protection which they now possess. Wages are not fixed by a system, but by agreement. Under the Taylor system there is exactly the same opportunity for bargaining, either individually or collectively, exactly the same remedies for oppressive conditions, in short, exactly the same protection for the workmen, that there is under any other system—no more and no less. The same forces that operate now to maintain, raise, or depress the rate of wages will operate as effectively under the Taylor system, and these are the only forces that can affect the question. When the time study has revealed more accurately than mere guesswork how much work can properly be done, there still remains the question as to how much shall be paid for that work. The settlement of that question is not determined by the time study, nor by any other feature of the Taylor system. But the result of the time study has furnished the workman with a vastly better ground upon which to bargain

about wages than he had when both parties were merely guessing as to the amount of a fair day's work. In the face of the actual results so far obtained, and the unequivocal statements as to the future intention of this department, the effort to protect the workmen from purely visionary dangers by depriving them of a present and very material benefit appears so strained and illogical as to suggest irresistibly either that the real reason for the effort has not been revealed or that those who profess to be so alert in protecting labor are singularly obtuse. Should they be successful in their effort to eliminate the time study and premium features, the workman who has become accustomed to receiving a substantial increase in his pay envelope under the premium system is going to find it difficult to figure out how he has been benefited when that increase is taken away from him and his hours of work are not reduced. I believe that the practical experience of the benefits of the premium system obtained by those who have worked under it during the past year will lead to a saner and more enlightened view of the subject, and develop clearly the fact that there is not, on the part of those who are personally affected, any real wish for the enactment of legislation so evidently opposed to their interests.

To show how directly and materially the premium system, based upon time study, has benefited the workmen, I invite attention to the following data as to the number, trade, and grade of the employees who have worked on premium during the past year, and the average monthly percentage of their regular pay represented by the premiums earned:

Date.	Number of men.	Hours worked on premium jobs.		Hours of premium time paid for.		Premium paid.	Regular pay.	Per cent of premium.
		Hours.	Min.	Hours.	Min.			
MOLDERS.								
July, 1911								
August, 1911	18	796	55	113	7	$46.72	$332.60	14.0
September, 1911	19	1,745	45	450	35	186.46	721.97	25.8
October, 1911	17	1,962	40	439	35	182.35	807.64	22.6
November, 1911	16	1,564	30	389	40	161.58	644.54	25.1
December, 1911	18	2,141	56	478	29	198.74	881.80	22.5
January, 1912	17	2,570	30	692	40	286.88	1,061.11	27.0
February, 1912	19	2,392	.....	562	40	183.11	1,037.26	17.6
March, 1912	18	2,175	50	600	59	246.79	917.67	26.9
April, 1912	12	1,644	.....	507	.....	207.81	674.21	30.8
May, 1912	11	1,490	45	478	41	197.03	614.56	32.1
June, 1912	11	1,298	16	380	53	156.85	533.89	29.4
						2,054.32	8,227.25	24.97
MACHINISTS.								
July, 1911	4	255	.....	59	45	20.16	84.46	23.8
August, 1911	8	[1] 839	.....	190	45	67.40	[1] 351.08	19.2
September, 1911	10	1,052	39	255	15	92.73	384.96	24.0
October, 1911	15	1,261	28	316	8	115.36	420.89	27.4
November, 1911	20	2,612	5	637	11	235.27	941.21	25.0
December, 1911	30	3,217	45	844	39	314.14	1,166.93	26.9
January, 1912	51	4,766	30	1,329	37	506.64	1,769.78	28.6
February, 1912	52	4,195	30	1,086	20	414.75	1,580.38	26.1
March, 1912	59	5,088	25	1,629	7	613.60	1,898.40	32.3
April, 1912	88	6,350	5	1,980	40	745.08	2,385.41	31.2
May, 1912	94	7,497	55	2,309	11	876.16	2,849.30	30.7
June, 1912	84	7,511	55	2,311	22	882.82	2,868.97	30.7
						4,884.11	16,701.77	29.24

[1] One man's time omitted on account of loss of card; time assumed.

The net result of these figures may be more significantly summarized by the statement that 153 men received during the last fiscal year a total of $6,938.43 more than they would have been paid except for the time study and premium features. Had conditions been such that all of these men could have been employed continuously on premium jobs, the premiums earned would constitute an actual increase in their annual pay of 28.59 per cent.

These very substantial increases earned under the premium method, without complaint of undue or disagreeable exertion, can hardly be regarded by any unprejudiced person as other than a distinct improvement in the industrial position of the workmen concerned, who must have been enabled thereby to live better and to obtain for themselves and their families advantages not previously enjoyed. It is difficult to believe that these men and those dependent upon them really favor a legislative prohibition of the premium feature, which would deprive them of their new comforts and compel a return to their former scale of living. I do not believe it, but by evidence gathered on the spot, as well as by the above considerations, am convinced that a free expression of opinion by the employees of the Watertown Arsenal, if it were possible to receive it, would be strongly in favor of a continuance of the system.

The figures given above show the benefits which accrue to the workman from the Taylor system as applied at the Watertown Arsenal. It is now appropriate to consider what advantages have been secured for the Government. In my last annual report such typical examples of reduced cost of manufacture were given as were available at that time. It must be remembered that the Government lacks the simple measure of economical efficiency which a private concern possesses in its net earnings, and that a convincing and definite comparison can only be had when the same or very similar articles have been manufactured under both new and old conditions. It should not occasion surprise, therefore, that the concrete instances available are not more numerous. But while these instances are not many, they serve to indicate beyond a reasonable doubt that the methods which have been so successful in the cases cited are producing a proportionate success in the work generally. From a comparison of the job cards of about 60 different jobs, each of which was performed under both the old daywork and the premium system, it appears that the average rate of production under the premium system is about 2½ times that of daywork. Had the same number of men been working on premium work throughout the year as were employed on such work during May and June at the Watertown Arsenal, there would have been a total net saving to the Government of $100,095.80. Inasmuch, however, as the number in the earlier months was much smaller, the amount saved was less, and the saving actually made was $49,102.95, as compared with the amount which had been estimated that the work was going to cost.

SAVINGS FROM IMPROVED SHOP MANAGEMENT AND PREMIUM SYSTEM (EXCEPT AS NOTED) AND DISPOSITION THEREOF.

The reduced cost of production at the various ordnance establishments, due to the improved methods of manufacture and to the premium system, as previously outlined, will continue to be realized from year to year. These savings were made with practically no

reduction of wages of employees; on the contrary, there were a large number of increases in day wages at all the arsenals, and the earnings of those on a piecework or premium basis were increased considerably. These increases, of course, have been deducted from the amount of savings reported below. Due to the existence of these savings for the current fiscal year the estimates for the next fiscal year have been reduced, thus giving the most practical expression to the results obtained. The savings amounted to over $240,000, which was used to increase the amount of work done and material manufactured under the various appropriations from which the savings were made. The estimates for the manufacture of small-arms ammunition during the next fiscal year have been reduced by $150,000 below the current appropriations; but for the reduced sum just as much ammunition will be procured as would be possible under the present appropriations at the prices of a year ago. The estimate for the manufacture of small arms is $100,000 less. The number of small arms made will not be as great as under the current appropriation, but it will not be diminished in proportion to the reduction in the estimate.

These figures need little comment, and, taken in connection with those showing the increased earnings of the workmen, furnish a complete explanation and justification of the advocacy of the Taylor system by this department. The workmen have received higher wages, while the net cost of the work has been reduced, an industrial result which both employers and employees are generally desirous of achieving. So far, at least, the advantages anticipated for both the Government and the employees have been realized, and none of the objectionable results so confidently predicted by its opponents have developed. The present situation, therefore, offers every inducement for the continuance of the conservative application of the Taylor system begun by this department, and such extension of the use of those features proved to be beneficial as local conditions shall justify.

SURPLUS STOCK SAVINGS.

Inasmuch as scientific management more systematically directs greater attention to all details of manufacturing work than was previously bestowed, its trial by the department led to a closer study, among other objects, of the amount and kind of material that should be kept on hand for manufacturing purposes, with the object of reducing such stock to the lowest limit consistent with efficient and economical operation. The study given this subject resulted in the adoption during the past year of a uniform system for determining the amount of stock to be carried and for providing for its replenishment. The overaccumulation of stock is easily accomplished. Material is prone to be scattered through a manufacturing establishment in unimpressive lots and to rest in out of the way places unobserved. The record of it is buried in the property return, often under a variety of half-known names, not meaning much to the clerks who handle the returns, which for the large arsenals are ponderous volumes discouraging critical examination. A careful determination under a scientific method of the proper quantity of stock to be kept on hand revealed the fact that in the case of many items the quantity had been excessive, and that the stock of those items could be greatly reduced. The process of realizing upon this surplus by using it in

current manufacture was at once begun and will be continued until it is all absorbed. It will take several years to accomplish this. During the past year $122,789.61 worth of this surplus has been used. This means that the manufacture of the articles for which the surplus material was used was accomplished by the actual disbursement of $122,789.61 less than would otherwise have been required, so that that amount of money was available for additional work.

The surplus stock savings, amounting to $122,789.61, were utilized in manufacturing 2,189 additional infantry rifles and a large amount of small-arms ammunition; while $17,585.13 were turned into the Treasury, as the purpose to which this sum was applicable can be covered by other appropriations without increase. Some $17,000 of this saving is still on hand.

STOCK FUND NOT YET UTILIZED.

At the Springfield Armory there is a remaining surplus of $130,313.53 over and above that mentioned above. When future orders are received by the armory for the manufacture of arms, report in each case will be promptly made to this office showing the value of the surplus material which can be utilized in such manufacture, and the allotment covering such orders will then be correspondingly reduced. This surplus consists largely of those components of the rifle which require the longest time, in the event of war, for their procurement, as, for instance, gun stocks, which should be seasoned for several years prior to use, and steel for the larger parts, as for the barrel and receiver, so that the amount of the saving does not represent a corresponding quantity of material for that number of completed rifles. It will require several years to absorb this surplus, which represents the amount by which the war reserve of material can be reduced by reason of the satisfactory store of finished rifles.

Reports have not yet been received from the other arsenals as to the resulting surpluses that will be available for such use in the stock fund. When such reports shall have been received these surpluses will be similarly utilized.

RECAPITULATION OF SAVINGS.

Savings from improved shop management, and premium system	$240,461.93
Savings resulting from the use of surplus stock	122,789.61
Total	363,251.54

Scrap material was utilized, as usual, in the manufacture of all articles whenever possible. The value of the scrap material so utilized during the year amounts to about $212,000. Under the new stock system this scrap is now taken up at its proper value on the stock-fund account. That used in the manufacture of any article is charged against the allotment for its manufacture and credited to the stock-fund account. When the stock fund exceeds an authorized maximum, the excess is turned back to this office and made available for allotment for additional manufactures.

CASH REWARDS FOR EMPLOYEES.

During the past year the subject of the desirability and justice of securing authority by which employees who were the authors of suggestions that resulted in valuable improvements or economies in manufacturing processes or plant could be adequately rewarded was

taken up and a recommendation submitted to you that an effort be made to obtain the necessary legislative action.

The history of this department contains many instances of employees who have offered suggestions that resulted in material improvements and economies. Under previously existing law there was no suitable way by which the laudable interest of these employees could be properly recognized. This lack of power to reward such suggestions undoubtedly deprived the Government of much advantage that would accrue from the stimulus to the interest in their work that could otherwise be secured, and placed the Government in the unsatisfactory position of appropriating such suggestions and benefiting from them without suitable recognition of the authors. The action recommended met with your approval and the matter was submitted to Congress. The result was the passage of an act, approved July 17, 1912, which authorized the payment of periodic cash rewards for the most valuable suggestions submitted by employees. So far as I know this act is the first successful effort on the part of any executive department of the Government to recognize in a material way those praiseworthy efforts of its employees which are outside of their ordinary work and for which their regular wage can not be considered a fair compensation. In addition, it affords another practical instance of the desire of this department to deal fairly with its employees and to promote that community of interest and close cooperation which both equity and efficiency demand. The necessary instructions for putting the act into effect have been issued, in accordance with which the first period within which rewards may be won will be from October 1 to December 1 of this year.

EXAMINATION AND SETTLEMENT OF ORDNANCE PROPERTY RETURNS.

The work of examination and settlement of property returns during the fiscal year is set forth in the following table:

Returns.	On hand July 1, 1911.		Received during fiscal year 1912.	Examined during fiscal year 1912.	Settled during fiscal year 1912.	Returned to officers for correction.	On hand June 30, 1912.	
	Unexamined.	Examined and not settled.					Partly examined.	Examined and not settled.
Arsenals:								
First division	1	15	23	22	19	.....	[1] 2	18
Second division	.....	3	24	24	26	.....	.....	1
Inspectors of ordnance	.....	.....	19	19	19	.....	.....	.....
Coast Artillery	.....	35	561	561	575	.....	.....	21
Field Artillery	.....	40	175	175	163	.....	.....	52
Cavalry	.....	41	594	593	594	1	.....	40
Infantry	.....	106	1,507	1,506	1,461	1	.....	151
Artillery districts	.....	8	61	61	60	.....	.....	9
Forts and posts	.....	114	513	512	547	1	.....	79
Surgeons	.....	9	508	507	498	1	.....	18
Philippine Scouts	.....	60	107	107	141	.....	.....	26
Submarine mine property	.....	9	103	103	104	.....	.....	8
Militia	.....	8	51	51	47	.....	.....	12
Colleges	.....	2	236	236	231	.....	.....	7
Individual horse equipments	.....	52	3,466	3,465	3,482	1	.....	35
Miscellaneous	.....	18	516	515	516	.....	.....	17
Total	1	520	8,463	8,457	8,483	5	2	494

[1] These are returns of June 30 and December 31, 1911, from the Rock Island Arsenal, which were received in this office on April 29 and May 27, 1912, respectively, too late to have the examination of them completed by the end of the fiscal year 1912. On June 30 the work of auditing the first-named return was 75 per cent completed, and that of auditing the last-named return was 25 per cent completed.

The amounts which the audit of property returns showed as due the Government and the collection of which was assured and obtained by that agency during the past fiscal year, together with the cost of auditing, are tabulated below:

Collected from officers of the Army	$2,543.58
Collected from enlisted men	20,828.01
Paid by States	180.66
Paid by educational institutions	3,698.00
Paid by transportation companies	1,894.19
Paid by executive departments	63.24
Total collected	29,207.68
Total paid for salaries of auditing force	25,700.00
Net direct saving to the United States due to existence of the auditing system	3,507.68

* * * * * * *

By adding the cost of each organization for each year to the sum of its costs for preceding years it is possible to arrive at the average annual cost, which average will approximate closer to the true cost of maintenance the longer the process is continued. The effect of abnormal expenditures, due to general refitting of an organization, which would result in a very high cost for one year, will, in this manner, be distributed over the entire period in which the property is consumed, and will not reflect unjustly upon the administration of the organization.

It is interesting to compare Table I in this report with the corresponding table in my last annual report. Taking the several branches of the service in the order in which they are listed it will be seen that Company H of the Engineers remains at the head of the list of that branch, although its cost for the last year was $255.07 against $8.97 for the preceding year. Company K, which was at the foot last year, still retains that position. In the Signal Corps, Company B, which was placed at the head last year, with no cost, is omitted from the comparison this year as it has no ordnance property. Company C goes to the head from third place last year and G, which was second last year, is also second for the two years. In the Cavalry the Eighth and Ninth Regiments which were, respectively, first and fourth, have exchanged places, and the Sixth and Fourth Regiments, which were second and third, have also exchanged places; the Third, Twelfth, and Thirteenth Regiments have neither lost nor gained, and the Second is still at the foot. Among the troop organizations C of the Fifteenth, E of the Eighth, and K of the Sixth, which were 1, 2, and 3, last year, have fallen below 5, while B of the Sixth has gone from 4 to 1. D of the Second, which was at the foot last year, has gone up two places.

In the Field Artillery the Fourth and Second regiments still maintain their posisions as 1 and 2, while the Third, which was third last year, has fallen to the foot this year. The positions of the Sixth and First Regiments remain unchanged. The first five batteries this year all belong to the Fourth Regiment. C has fallen from 1 to 3; D has gone up from 2 to 1, and A from 5 to 2.

In the Coast Artillery but one organization of those named last year remains in the table for this year. The Thirtieth Company was third last year, but for the two years has dropped to the foot of the list, a remarkable change. Its cost for the past year was $18,929.87, as contrasted with $11.76 for the preceding year.

In the Infantry the Twenty-second Regiment retains its place at the head, followed by the Twenty-fifth, which was not placed last year. The Sixteenth Regiment has fallen from three to four. The Twenty-sixth, Twelfth, First, Eighteenth, and Eleventh Regiments have disappeared from the table, and in their place the Twenty-fifth, Tenth, Nineteenth, Fourteenth, and Seventeenth have appeared. The Thirtieth and Twenty-seventh Regiments, which were, respectively, the next to the last and the last, have now exchanged places.

Among the Infantry companies only three named last year have survived. G of the Twenty-first has moved up two numbers from third from the foot, F of the Twenty-seventh has moved up two numbers from next to the foot, and D of the Twenty-first has moved from foot to third from the foot. The last place is now occupied by D of the Thirtieth.

In the Porto Rico Regiment Company H, which was first last year, has dropped to the foot; Companies E and G have moved up each one number and are now first and second. Company B has dropped from four to next to the foot, exchanging places with C. Company F has moved up two places from the foot. It should be noted that the costs of the several organizations of this regiment do not show such wide differences as obtain in the other branches, the difference between the first and the last for the two-year period being only $921.69.

In the Philippine Scouts the Forty-ninth and Forty-eighth Companies retain their places as first and second, and the Second Company still remains at the foot. The Twentieth Company has dropped from fourth to fifth place, and the Forty-fourth Company from fourth from the foot to second from the foot; the Tenth Company has gone up two numbers. The Fourth, Fifty-second, Thirty-sixth, and Twenty-ninth Companies have gone out of the table, which indicates a gain for the last two and a loss for the others.

TABLE II.

Branches of service.	Average annual cost of organization, 1910 and 1911.	Average cost per regiment.
Engineers	$971.33 per company	
Signal Corps	$473.49 per company	
Cavalry	$1,770.58 per troop [1] [2]	$21,246.93
Field Artillery	$4,136 per battery [1] [3]	24,816.01
Coast Artillery Corps	$79.79 per company	
Infantry	$421.16 per company [1] [2]	5,053.91
Porto Rico Regiment	$503.48 per company [2]	4,027.87
Philippine Scouts	$327.97 per company	

[1] Subject to change when records shall have been completed.
[2] Includes headquarters, M. G. P., and miscellaneous.
[3] Includes headquarters and miscellaneous.

A comparison of the figures in Table II with those of last year does not reveal any marked changes. For the Engineers, Signal Corps, Field Artillery, Coast Artillery, and Porto Rico Regiment the average cost per company or battery for the two-year period is somewhat greater and for the remaining branches somewhat less than for the first year. By regiments there is a slight decrease for the Cavalry and Infantry and a material increase for the Field Artillery and Porto Rico Regiment.

TABLE III.

Branches of service.	United States and Alaska.			
	Maximum.		Minimum.	
	Organization.	Amount 1910 and 1911.	Organization.	Amount 1910 and 1911.
Cavalry:				
Troop	E, First	$6,147.69	B, Sixth	$979.99
Regiment	First	51,588.83	Ninth	22,906.25
Field Artillery:				
Battery	A, Third	11,572.14	D, Fourth	2,122.74
Regiment	Third	75,967.81	Fourth	16,732.19
Infantry:				
Company	D, Thirtieth	2,931.44	B, Twenty-second	104.32
Regiment	Thirtieth	18,931.63	Twenty-second	3,154.48

Branches of service.	Philippines and Hawaii.			
	Maximum.		Minimum.	
	Organization.	Amount 1910 and 1911.	Organization.	Amount 1910 and 1911.
Cavalry:				
Troop	D, Fifth	$7,256.38	B, Second	$6,158.25
Regiment	Second	58,405.53	Fourteenth	41,114.51
Field Artillery:				
Battery	A, First	12,900.50	F, Second [1]	2,668.03
Infantry:				
Company	D, Twenty-first	2,290.83	F, Sixth	162.40
Regiment	Third	9,906.71	Nineteenth	6,253.40

[1] Does not include $1,664.04 in United States.

Table III again illustrates forcibly the difference between organizations of the same branch of the service. For the two-year period Troop B of the Sixth Cavalry cost $979.99, while Troop E of the First cost $6,147.69. The Ninth Cavalry cost $22,906.25, while the First cost $51,588.93. In the Field Artillery, Battery D of the Fourth Regiment cost $2,122.74, as against $11.572.14 for Battery A of the Third and the Fourth Regiment cost $16,732.19 against $75,967.81 for the Third. Similar differences are exhibited in the case of the Infantry. While these differences are still very great, they are generally less than those reported last year. Should they fail, however, to decrease annually with the leveling additions of each year, they will afford one more indication of unequal care in the use of property.

The comparative average cost of maintenance of troops on this continent and in the island possessions of the United States over a period of two years is as follows:

TABLE IV.

Troops.	In United States and Alaska.	In Philippines and Hawaii.
Cavalry, per troop	$1,662.22	$2,066.43
Field artillery, per battery	3,737.25	4,545.14
Infantry, per company	403.96	343.83

The difference between the figures of Table IV and those of last year are small and possess no material significance.

While the relative order of organization in these tables can not yet be accepted as positive proof of either superior or inferior economical use of ordnance property, it does reveal in some cases tendencies which succeeding years are more likely to confirm than disprove. It is not likely that the retention of a high or low position for two years is entirely accidental.

The cost of maintenance records as now kept will, it is believed, accomplish two valuable results. The annual publication of the comparative standing should direct attention more pointedly to this feature of general efficiency and increase the desire among organization commanders to make a good showing. The records also, after a few years, will afford the necessary data for determining the fair and proper average annual cost of maintenance for organizations of each branch of the service. The determination of that cost is a necessary preliminary to the formulation of a plan for simplifying the present methods of property accounting by the establishment of an annual allowance, expressed in money value, against which an organization can draw without rendering an itemized account for the stores drawn.

ORDNANCE EQUIPMENT FOR MOBILE ARMY.

The small arms and equipments for the recruits necessary to bring organizations of the Regular Army from maximum peace strength up to war strength have been stored at the several recruit depots, in order that recruits may be armed and equipped in case of an emergency at the depots before proceeding to join the organizations to which they are assigned.

The arms, equipments (personal and horse), ammunition, and miscellaneous articles for the different branches of the service required for the proper equipment of the number of volunteers that it is anticipated will be raised in case of war with a first-class power (in addition to the present Organized Militia, armed and equipped) are on hand at arsenals or depots, under manufacture, or to be manufactured under appropriations now available, with the following exceptions:

(*a*) Cavalry: A number of automatic pistols, caliber .45, and holsters therefor, and a number of horse equipments, are still required to complete the equipment of cavalry troops. A sufficient number of saddles is available, and the saddle is considered as the basis of a set of horse equipments. The other articles short can be procured rapidly in case of an emergency.

The pistols and holsters required will be procured as fast as funds become available for the purpose. The shortage in horse equipments is due to the fact that this department is awaiting the results of the experimental tests now being made by troops of the equipments recommended for adoption by the Cavalry Equipment Board.

(*b*) Field Artillery: Of the 264 batteries required for the mobile army of 450,000 officers and enlisted men in continental United States, the necessary number of field guns, carriages, limbers and equipments for only 171 batteries are now in the possession of the Regular Army or Organized Militia, in ordnance establishments, under manufacture, or to be manufactured under appropriations now available, with the exception of a number of automatic pistols, and holsters,

bolos, and scabbards, and a number of horse equipments for the individually mounted men. The amount of ammunition on hand for the field guns is far short of that considered desirable. No ammunition trains have been provided.

It is anticipated that the troops required for the 93 batteries of Field Artillery for which guns, carriages, limbers, etc., have not been provided would, in case of an emergency, be organized and used as Infantry, in which event a sufficient quantity of arms, equipments, and ammunition, with the exception of automatic pistols and holsters, and a few horse equipments, are available.

ORDNANCE EQUIPMENT FOR COAST ARTILLERY.

In case of an emergency it is understood that the Coast Artillery Corps of the United States Army would be increased to 42,000 men. A sufficient quantity of small arms and equipments for the proper equipment of the 42,000 Coast Artillery troops is now on hand in the regular and militia troops of the Coast Artillery Corps or in ordnance establishments, with the exception of automatic pistols and holsters.

WAR PLANS.

Four division field ordnance depots, established during the last year, with the 16 mentioned in my last annual report, complete the 20 such depots required for war. Eighteen of these depots are for full Infantry divisions, and two for full Cavalry divisions. Each of these depots contains stores, supplies, and spare parts (except some pertaining to Field Artillery), sufficient to maintain a division in proper supply for six months.

SMALL ARMS.

Semiautomatic shoulder rifles.—Tests of semiautomatic shoulder rifles, designed by this department and submitted by private individuals, have continued during the past year. The rifles tested, while not developed sufficiently to warrant adoption for use in the military service, have nevertheless shown results which have been encouraging.

Moore silencer (rifle).—The results of tests made during the past year caused the purchase of 100 of the Moore silencers for issue to selected organizations for test in comparison with the Maxim silencer.

Automatic pistol, caliber .45, model of 1911.—Due to difficulties experienced by the contractors in obtaining steel of the proper specifications, the deliveries of the automatic pistols, model of 1911, have not been as large as anticipated. However, it is expected that sufficient deliveries will have been made to properly equip all of the regular troops serving in the United States in time for the next target practice season. A limited quantity of pistols and ammunition has been issued to all inland posts in the United States, for use by officers and enlisted men in becoming familiar with the pistol, pending their general issue.

Infantry equipment, model of 1910.—The manufacture and purchase of the new design has progressed satisfactorily. The Fourth, Seventeenth, Twenty-seventh, and Twenty-eighth Regiments of Infantry have been supplied with equipments of the new design for the pur-

pose of making some tactical experiments for which the use of the new design was necessary.

Cavalry Equipment Board.—In view of the recommendation of the Cavalry Equipment Board that further service tests be made with the new design of saddle and pertaining equipments before adoption, a sufficient quantity of personal and horse equipments have been manufactured at the Rock Island Arsenal for the proper equipment of two troops of the Eleventh Cavalry, which have been supplied with them for special test.

Sabers and scabbards.—A number of experimental sabers are being manufactured with a view to the adoption of a saber that will be suitable for officers and enlisted men of all arms of the service. The saber selected will be tried out in the field test mentioned in the preceding paragraph.

The scabbard for these sabers will be lined with wood, metal tipped, and covered with rawhide and olive-drab duck.

Fencing equipment.—The difficulty experienced with fencing bayonets on account of breakages during fencing bouts has, it is believed, been overcome by the adoption of a fencing bayonet the blade of which is reduced in thickness, made more flexible and spring-tempered, in accordance with the recommendation of the master of the sword, United States Military Academy. The entire blade is covered with leather to protect the fencer from injury in case of breakage.

Experiments are in progress to determine the advisability of adopting a fencing saber, the blade of which is made of steel, in place of the wooden saber.

Electrically-operated targets.—The Bremer electric target has been given a thorough test at the School of Musketry, and the results show that this target is not suitable for the service, principally on account of its massiveness and failure to function properly.

The Ellis self-scoring target has been given extended tests at the School of Musketry, with promising results. It is proposed to install one each of these targets at Fort Myer, Va., and the District of Columbia rifle range in order to ascertain the action of the target in cold weather.

Range finder for Infantry and Cavalry.—Several additional range finders have been procured from manufacturers for test at the School of Musketry and by the Provisional Regiment of Infantry.

Issue of personal and horse equipments, cleaning and repairing materials to organizations by post ordnance officers.—In order to save transportation and cost of packing of small lots of ordnance and ordnance stores, and to make prompt issues to organizations to replace unserviceable and condemned stores, sufficient quantities of personal and horse equipments, cleaning and repairing materials have been, or will be, issued to ordnance officers of posts where storage space is available for this purpose.

GUNS AND MORTARS.

Installed armament.—Reports from armament officers and from Artillery sources indicate that the guns and mortars mounted in the seacoast fortifications have been maintained in a satisfactory state of efficiency during the year. No serious defects were developed during the rather extensive firings by regular and militia troops.

Erosion.—The department has continued its investigations of the causes of erosion in cannon and its search for means of preventing it. In that connection firing tests were undertaken with a variety of steels of domestic and foreign manufacture made into barrels for the caliber .30 automatic machine gun. Seven varieties of steel have been used in the tests thus far completed, and two additional types are now undergoing test.

The results obtained to date indicate that the service type of gun steel is highly efficient in resisting erosion, being slightly superior in that respect to some and much superior to other types of steel tested.

Relining of guns.—Additional guns that have reached the limit of their accuracy life have been relined with full length lining tubes. This method of restoring eroded guns to serviceable condition at a moderate cost continues to give satisfactory results.

Gun construction.—A number of 14-inch wire-wrapped guns have been completed since my last annual report and others are in various stages of completion. Those of the later types are six calibers longer than those of earlier designs, and have a higher muzzle velocity. The wire-wrapped type of construction has continued to give satisfaction both as to the low cost of manufacture and as to the behavior of finished guns.

Cast steel.—Efforts have been made to reduce the cost of cannon by developing the use of cast steel for the outer parts of wire-wrapped guns and mortars of large caliber. Little success has yet been attained, difficulty having been experienced in producing large castings sufficiently free from local defects for this class of work.

New design 12-inch mortar.—A new design of 12-inch mortar of the wire-wrapped type, five calibers longer than the preceding models, has been prepared for use in the construction of the mortars destined for the defense of the Panama Canal. The increased length permits a considerably increased muzzle velocity with an extension of an extreme range to something over 11 miles.

Cheaper material for mobile guns.—Experiments have been made with a view to reducing the cost of mobile cannon by the use of high-grade commercial bar stock in their manufacture, in lieu of the much higher priced gun steel. A 3-inch gun tube was accordingly manufactured from commercial nickel-steel bar stock. This material seemed to possess satisfactory physical qualities and could be purchased at a much less cost than standard gun forgings. A test of this gun, using excessive pressures, developed somewhat greater enlargement of the bore than had been obtained with guns of standard material under similar test. The rigid inspection to which gun forgings are subjected during manufacture, and the requirement for cutting larger percentages from the top and bottom of the ingot than is done in commercial practice, evidently results in a better and more uniform product, the difference of which can not always be detected by ordinary physical tests. It has therefore been decided to adhere to the standard material except in the manufacture of subcaliber guns, the firing strains on these not being very severe.

Increase in accuracy life of guns.—A change in the bores of seacoast cannon of 5-inch caliber and over has been adopted, which it is expected will materially increase their accuracy life. It is expected that the rifling will now be preserved through a considerably greater number of rounds than heretofore.

GRENADES.

Improvement in service types.—The efficiency of the service types of hand and rifle grenades has been greatly increased by a change in design to provide for the use of cold-drawn steel in the chief component of the grenade in lieu of cast iron previously used.

The efficiency of the rifle grenade has been further improved by the addition of an attachment to the stem whereby the extreme range of the grenade is materially increased.

Simulated bursts of shrapnel.—Devices of the nature of smoke grenades, designed to represent in an inexpensive way the bursts of shrapnel, have been developed and some of them manufactured and issued to the service. They permit the preliminary training of officers and enlisted men in the observation and adjustment of fire without the expenditure of the more expensive ammunition.

SMOKELESS POWDER.

Powder board.—The Joint Army and Navy Board on Smokeless Powder, consisting of officers of the Navy Bureau of Ordnance and of this department and including among its members the commanding officers of the Army and Navy powder factories, has continued its work during the year, with a view to improving the quality and cheapening the cost of manufacture of smokeless powder. The specifications for smokeless powder have been recently revised and reprinted to incorporate therein a number of changes based on recommendations by the board.

Drying powder at higher temperatures.—During the year several lots of smokeless powder were dried at temperatures somewhat higher than those formerly employed, the use of the higher temperature so greatly shortening the time of drying that the total effect of the heat action is apparently lessened in comparison with that of drying at the usual temperature. In this work the powder was not continuously subjected to the higher temperature, but the temperature of the dry-house was raised to the drying point, then lowered to atmospheric temperature a number of times during the process of drying. Lowering of the temperature does not materially lengthen the total time of drying, but materially lowers the mean time to which the powder is subjected to high temperature during the drying process. The expansion and contraction of the powder grain during the successive changes of temperature appear to break the skin which might otherwise form and prevent the ready escape of the solvent. The results thus far obtained by the method of drying outlined above are very satisfactory.

Higher percentage of stabilizer.—Two lots of cannon powder and one lot of small-arms powder were manufactured during the year, containing twice the usual percentage of the stabilizing material incorporated in the powder. All tests to date indicate that this change materially increases the stability of the powder without introducing objectionable effects, but the change will not be adopted for all powder until after further storage tests of the lots already manufactured.

Blending of smokeless powder.—Tests in blending powder at the factory have demonstrated that increased uniformity of the blend can be obtained by running the powder through the blending tower

a greater number of times than has heretofore been the practice. It has not yet been determined to what extent, if any, the additional runs through the blending tower would improve the uniformity of the muzzle velocities. It is possible that the improvement in blending might be offset by the effect of the longer exposure of the powder required in the further blending.

Effect of storage at fortifications.—Tests are now under way to determine the effect upon the powder of such exposure as is necessary in blending at seacoast fortifications and the effect of storing powder in containers that are not tightly sealed. Firings made with powder charges that had been longest in store at various fortifications, some of which charges were in containers that were not moisture-proof, gave quite satisfactory results. The mean velocity of approximately 20 per cent of the lots had dropped somewhat below that prescribed; the uniformity in all rounds was excellent, being within the limits prescribed for the acceptance test of powders.

AMMUNITION FOR CANNON.

Projectiles.—Excellent progress has been made in the work of adding broad bands and otherwise improving the armor-piercing projectiles on hand and issuing them to the seacoast fortifications. Preparations are being made for adding long-pointed caps to the projectiles as soon as the emplacement hoists shall have been modified to accommodate them. By lessening the air resistance these will materially increase the extreme range and the armor penetration of projectiles.

Tools for loading projectiles.—In order to expedite the filling of projectiles in case of emergency, a simple outfit that can readily be duplicated at fortifications has been developed. This outfit, consisting of a few simple tools, has been issued to each battery, together with the necessary information for improvising the remainder of the outfit at the battery. These outfits are in addition to the more elaborate ones heretofore issued to the various Artillery Districts, the use of which will serve to indicate standard results in loading.

Igniting charges.—Tests of various methods of distributing through the smokeless powder charges for cannon the igniting charges of black powder have indicated that the present arrangement of placing an igniter at each end of each section of the smokeless powder charge gives the most uniform velocities and pressures and is otherwise the most satisfactory one.

Primers for fuzes.—A quick-acting primer has been developed for fuzes. The primer is an all-fulminate type, it having been found that the black powder reenforcing charge has a tendency to cake in storage and retard ignition.

Tracers.—Day and night tracers are still under development. A new method of ignition has been tested with promising results, though it is not yet entirely satisfactory.

High-explosive shrapnel.—A type of 3-inch high-explosive shrapnel has been developed which it is expected will prove satisfactory for general adoption. The test of a small lot has been satisfactory, and a larger lot is now under manufacture for further test.

Designs of high-explosive shrapnel for the larger calibers are being developed. Several improvements are being incorporated, including

a bore safety feature for the detonator, which feature is designed to prevent the detonation of a shrapnel in the bore or in handling even though the detonator itself should explode.

Testing of shrapnel cases.—A new method of hydraulically testing the bases of shrapnel cases up to the rotating band has been developed. A similar test covering the whole exterior of the projectile is being developed for common steel shell. These tests are for the purpose of detecting concealed defects and structural weakness that might cause a premature explosion in the bore.

Shrapnel cases from bar stock.—Additional machinery has been installed at the Frankford Arsenal whereby shrapnel cases for 3-inch ammunition can be machined from bar stock at a cost approximately one-half that heretofore paid to contractors. Cases manufactured in this manner have been found to be practically free from the cracks, seams, and similar defects sometimes found in drawn cases. Additional machinery is being installed for the manufacture of shrapnel cases of larger caliber which can also be used in the manufacture of common steel projectiles.

High-explosive shell accident.—During the target practice of a battery of the Ohio Militia at Sparta, Wis., in September, 1911, a high-explosive shell detonated in the bore of a 3-inch field gun, destroying the gun and killing two enlisted men.

The accident was carefully investigated by the department with a view to determining its cause and preventing a recurrence. The conclusion was reached that it was probably due to a flaw in the base of the projectile too slight to be detected during manufacture but sufficient to permit the entrance of the powder gas under the high pressure in the gun, thus igniting the bursting charge. As a result of the accident all projectiles and fuzes of the types involved, they being some of the older ones, have been withdrawn from service for such modification and tests as will remove all doubt of their future safety.

AUTOMATIC MACHINE RIFLES.

During the past year automatic machine rifles, caliber .30, model of 1909, with pack outfits, have been issued to all machine-gun platoons of the regular service as well as to all militia organizations submitting requisitions therefor. A small reserve is on hand and is being increased at a satisfactory rate. The Maxim automatic machine guns, caliber .30, model of 1904, with which the troops were formerly equipped, have been turned in to arsenals and will be held in reserve for the future use of the mobile army.

MOUNTAIN ARTILLERY.

The battery of new 3-inch mountain howitzer matériel, mentioned in my last annual report, is now undergoing trial and will, if satisfactory, shortly be issued to the service for further test.

PACK OUTFITS.

For 2.95-inch Vickers-Maxim mountain gun matériel.—American model pack outfits of improved design for 12 batteries have been issued to the service. The pack equipment formerly in the hands of

these 12 batteries will be overhauled and placed in stock for reserve. The headquarters and one battalion of the Fourth Field Artillery took a practice march of 1,000 miles during the past summer for the purpose of testing mountain artillery equipment and organization. It is expected that considerable improvement in the ordnance supplies will result therefrom.

For fire control equipment of mountain batteries.—The pilot packs for this purpose referred to in my last annual report have been remodeled and furnished to the Fourth Field Artillery for test, but no report thereon has as yet been received.

For automatic machine rifles, caliber .30, model of 1909.—Sufficient packs for 325 machine-gun platoons, or 650 rifles, have been completed. Issue has been made to all machine-gun platoons in the regular service as well as to militia organizations making requisition therefor.

FIELD-GUN MATÉRIEL.

The conversion of 3.2-inch gun batteries to 3-inch of modern design continues at the rate permitted by appropriations. All 4.7-inch gun batteries to be furnished in the near future are approaching completion.

HOWITZER MATÉRIEL.

The pilot 3.8-inch howitzer carriage has been manufactured and is now undergoing test. It is expected that when this test is completed manufacture in quantity will proceed. One battery of 6-inch howitzer matériel and one battery of 4.7-inch howitzer matériel will shortly be issued to the service, and a limited number of each type will soon be in store. Further manufacture of 6-inch matériel in the immediate future is not contemplated, as the supply is in a more forward condition than that of any other howitzer matériel. Additional batteries of 4.7-inch howitzer matériel will be fabricated as fast as funds permit.

SUPPLY OF MOBILE ARTILLERY.

As stated in my last annual report, the supply of this class of equipment is less satisfactory than that of any other furnished by the Ordnance Department, except the ammunition for field artillery. The appropriations for the last two years for this purpose have been somewhat larger than for several years prior to that time, but it is hoped that still larger annual appropriations may be made, as even the present rate is not such as to provide a sufficient amount within a reasonable time.

COAST ARTILLERY PRACTICE.

Behavior of matériel.—Reports received during the year show continued improvement in the results of Coast Artillery target practice and generally satisfactory behavior of the ordnance matériel used in that work. The service targets have been modified in a number of features with a view to decreasing their cost and making them less liable to serious damage from projectiles or a rough sea.

Damaged rotating bands.—In order to determine whether such extensive deformation as the bands of projectiles frequently receive

in shipment and storage prior to use would have any objectionable effect, firings were made with four 8-inch projectiles having bands in good condition, in competition with a like number having very badly battered bands. The results with the two types were practically identical, there being no difference either in muzzle velocity, maximum powder pressure, range attained, or uniformity of ranging.

FIELD ARTILLERY PRACTICE.

Behavior of matériel.—Reports received during the year indicate that the Field Artillery guns, carriages, and ammunition are in general giving satisfaction in service. Careful study of all the details of manufacture has resulted in steady improvement in the quality of ammunition manufactured. The quality of that now produced, especially in so far as concerns the uniformity of the action of fuzes, is believed to be equal to, if not superior, to that of any ammunition produced abroad. On account of the necessity for utilizing the oldest ammunition on hand, that fired by service batteries at current target practice is not of as good quality as that now being produced.

School of fire.—An increase of $20,000 in the current fortifications act has permitted a corresponding increase in the allowances of ammunition for expenditure at the School of Fire for Field Artillery. The school is believed to be doing very important and necessary work in the training of officers of the Field Artillery in the adjustment and control of artillery fire.

Fuze setters.—A number of improvements of considerable importance have been developed during the year and are being incorporated in the service fuze setters for the mobile artillery guns and howitzers. These include the furnishing of new range rings to better coordinate the range setting and the point of burst; the provision of better means for taking up any looseness arising from wear of parts; the incorporation of changes for rendering the fuze setters dustproof, and for insuring better lubrication of the principal bearings.

THE ARMY POWDER FACTORY.

The Army Powder Factory is located at the Picatinny Arsenal, which is also the principal depot of the department for the storage and issue of powder, ammunition, and high explosives.

Approximately 463,000 pounds of cannon powder and 106,000 pounds of caliber .30 and other small-grained powders were manufactured during the year. The factory cost of the powder has been reduced during the year from about 38½ cents to about 36 cents per pound.

A total of approximately 1,500,000 pounds of cannon powder and 140,000 pounds of caliber .30 powder have been manufactured since the factory was put into operation in the month of June of 1908. The factory cost of this powder has been approximately $683,000. To this should be added $11,500 to cover losses due to fire and accidents, making a total of $694,500. If this powder had been procured by contract at prevailing prices, it would have cost about $1,037,000. The saving has therefore been $342,500.

The total cost of the original plant was $165,000, its capacity being 3,000 pounds of powder per day of 24 hours. Under a subsequent

appropriation of $175,000 the capacity of the plant has been increased to 9,000 pounds per day of 24 hours, with the exception that some of the apparatus for the nitrating house and ether-alcohol house has not yet been installed.

The experimental plant for the manufacture of high explosives has been kept in operation throughout the year. The output has been small, but much valuable information has been secured in reference to methods of manufacture and cost of production.

FIRE-CONTROL INSTRUMENTS FOR FIELD ARTILLERY.

The Aubrey sextant telemeter referred to in my last annual report will shortly be issued to all field batteries in the regular service and the militia.

MATÉRIEL FOR MILITIA ARMORIES.

The fire-control instruments which may be purchased from funds already appropriated have been completed and supplied. Dummy armament is now being procured under contract and should be completed about July 1, 1913.

SEACOAST CARRIAGES.

Issues of 14-inch guns on disappearing carriages, and 12-inch mortars on mortar carriages of the latest type, have been made to the insular possessions since my last annual report.

FORTIFICATION OF THE ISTHMIAN CANAL.

The work on armament for the Isthmian Canal in progress at arsenals has proceeded satisfactorily. On account of the short time available until the opening of the canal it has been deemed advisable to obtain a limited number of 12-inch mortar carriages by contract, and the order for this work has been placed.

10-INCH EMERY DISAPPEARING CARRIAGE.

The status of work on this carriage is the same as when my last annual report was submitted.

MAINTENANCE OF THE ARMAMENT OF FORTIFICATIONS.

This work has proceeded satisfactorily during the year, and service mortars, guns, and carriages have been maintained in a good state of efficiency.

IMPROVEMENTS IN INSTALLED SEACOAST GUNS AND CARRIAGES.

The modification of seacoast matériel of the older designs is very desirable, since by the expenditure of a small percentage of their cost the carriages can be made almost equal in efficicney to the latest models. The benefit that would accrue is very large compared with the cost. Those carriages which have to date been modified are giving excellent service. Complete designs are on hand for matériel

which can not now be modified on account of lack of funds. As these carriages can be used in their present condition, the necessity for their modification is not as urgent as the need for increasing the reserve of Field Artillery matériel. The estimates for the alteration of seacoast armament have therefore been reduced to a minimum, while the estimates for field artillery have been increased.

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SANDY HOOK PROVING GROUND.

Sandy Hook Proving Ground was commanded during the year by Col. Rogers Birnie, who is also president of the Ordnance Board, president of the Board for Testing Rifled Cannon, president of the Joint Army and Navy Board on Gun Forgings, and armament officer of the Sandy Hook Armament District.

The ballistic tests of service and experimental material during the year included 27 lots of shot and shell, 24 lots of shrapnel, 7 lots of shrapnel cases, 48 lots of fuzes (combination and detonating), 15 lots of shell tracers, 62 lots of powder, and 8 lots of fixed ammunition. Twenty armor plates were tested for acceptance and 20 guns proved. The principal new or experimental material under test included 14-inch disappearing carriage, model of 1907; 12-inch mortar carriage, model of 1908; turret and barbette armor plates for two 14-inch gun turrets to be erected on El Fraile Island, Manila Bay; the pilot 3-inch mountain gun and carriage; 4.7-inch and 6-inch howitzers and carriages of latest designs; and various designs of high-explosive shrapnel.

The number of rounds fired from guns of various calibers during the year was 2,517. Forty fragmentation tests of projectiles were made. These firings necessitated the preparation of 408 reports and firing records, and the plotting of 42 targets and of a large number of charge-velocity and charge-pressure curves for powder records.

Railroad.—The freight shipped over the proving ground railroad during the year amounted to 28,998,962 pounds, involving a total car movement of 1,348 cars. The total number of passengers carried during the year was about 136,000. Creosoted hardwood ties, cut and treated on the Picatinny Arsenal reservation, are now being used exclusively to maintain the railway.

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ROCK ISLAND ARSENAL.

This arsenal was commanded during the year by Lieut. Col. George W. Burr, who is also chief ordnance officer of the Central Division.

The receipts and issues of ordnance stores, considering the number of packages and their weight, are approximately the same as in the preceding fiscal year. The number of issues has been reduced as much as possible by the policy of holding unimportant issues until a sufficient amount has accumulated to make more economical shipments.

Grounds and buildings.—The usual repairs to the grounds, roads, and buildings have continued during the year. Funds available permit only the most urgent work of this kind, and much that is highly desirable is of necessity omitted.

Sanitary conveniences.—Shop G has been provided with new toilet rooms. Plans are under consideration for improving the sanitary conveniences of the main office and barracks building.

Filtration plant.—Under an appropriation for the purpose, plans have been prepared for a mechanical filtration plant having a capacity of 1,000,000 gallons per day; contract has been awarded and the construction is now under way. This plant will be located north of shop F and west of the large reservoir. It will consist of a brick building containing a pump room and the filters, with the clear well underneath, and a covered-in settling basin attached.

Scientific management.—The installation of the Watertown Arsenal system of shop and storehouse management, as far as it relates to the systematization and standardization features, was undertaken at this arsenal in September, 1911, and has since been in operation. All office arrangements have been perfected, the engineering and planning divisions established, the necessary blank forms provided and placed in use, cost and time divisions established, all machines have been symbolized and rearranged, the tool room has been rearranged, as also have the storerooms. In general, a most satisfying progress in the installation of the improved system has been made, reflecting credit upon the energy and ability of Maj. D. M. King, who has been in direct charge of the installation.

Armory shops.—The armory shops have been running throughout the year without interruption. The daily output of rifles, which was 100 per day at the beginning of the year, is now about 65. Nineteen thousand seven hundred and thirty-eight rifles, caliber .30, model of 1903, and 23,394 bayonets, model of 1905, have been manufactured. In addition a large number of spare parts have been made, and a large amount of repairs completed.

Chemical and physical laboratory.—The chemical laboratory has continued to be a valuable factor in the acceptance of material. Numerous samples of steel, coal, oils, and miscellaneous materials have been tested during the year. The laboratory is being equipped for water analyses. A total of 2,290 tests, exclusive of 200 cement tests and about the same number of velocity determinations, were made during the year, all in connection with the current work of the arsenal.

Equipment shop.—The principal work in this shop during the year has been in connection with the manufacture of parts for the new infantry equipment, as well as parts for pack outfits for 75-millimeter mountain gun batteries and automatic machine rifles, model of 1909. Considerable experimental work was done for the Cavalry Equipment Board. A method has been developed of manufacturing canteens which will effect a saving of $27.88 per hundred. Experimental work was done in connection with the design and modification of pack outfits for automatic machine rifle and 3-inch mountain howitzer. Two experimental pack reels, following the recommendations of the Mountain Artillery Board, were made and are now undergoing test.

Continued effort has been made to improve methods in this shop. The following tabulation shows the reduction in costs of manufacture of the principal articles in this shop, in comparison with the costs for the preceding year.

	Price per 100.	
	1911	1912
Spoons	$6.96	$5.84
Forks	6.91	6.13
Meat cans, aluminum	39.66	34.92
Slides for officers' garrison belts	12.48	11.47
Attachment hooks, officers' garrison belts	18.45	18.27
Saber snaps, officers' garrison belts	55.98	46.38
Suspension D-rings	.52	.42
Bacon cans	11.76	11.34
1-inch end clip bar buckle	1.68	1.61
⅝-inch tongueless buckle	.82	.61
⅝-inch end clip	.41	.35
1-inch wire hooks	1.19	.87

It will be noted that some of the percentages of reduction are quite large.

Carpenter shop.—The principal work in this shop during the year has been in connection with the manufacture and repair of Artillery wheels, the manufacture of chests, battery and store wagons, and the conversion of 3.2-inch Artillery matériel.

The following tabulation shows the reduction in cost of manufacture of certain of the articles produced in this shop during the year, as compared with the preceding years:

	Former cost per 100.	Present cost per 100.
Intrenching pick-mattock handles	$12.44	$11.03
Brace-bar boards	25.21	22.37
Side-bar boards	9.38	4.13
Boxes for marking outfits for leather goods	199.12	159.30
Boxes for marking outfits for metal goods	265.44	211.35
Powder grains for dummy cartridges	.50	.09

Harness shop.—The policy of changing from hand work to machine work where practicable has been continued during the year. There are now installed in the harness shop and engaged on leather stitching 11 Campbell machines, 2 union lock-stitch machines, and 1 Singer wax-thread machine. These machines produce an output at least equivalent to the handwork of 130 harnessmakers. Forty-four additional cloth-sewing machines have been installed, which is the largest equipment the arsenal has ever had on cloth work. The principal manufactures in this shop during the year have been new Infantry equipments, pack outfits, Artillery harness, revolver holsters, etc. In this shop also material reductions in costs of manufacture have been obtained, as will be seen from the following tabulation of some of the principal articles of output.

	Former cost.	Cost for 1912.
Aparejos for pack outfits	$21.84	$20.49
Halter bridles for pack outfits	5.11	4.06
Nose bands, cavesson	1.90	1.74
Nosebags, model of 1908	1.33	.95
Blinders for pack outfits	3.43	1.41
Hatchet head cases	1.23	.86
Cases for Colt's automatic machine gun	10.58	9.19
Barrel cases, model of 1909, Benét-Mercié	5.29	3.43

	Former cost.	Cost for 1912.
Loading-tool cases, model of 1909	$6.47	$3.46
Hand fuze setter case	4.76	3.58
Gunslings, model of 1907	.916	.868
Horse covers	4.45	2.86
Rifle cases, automatic machine gun	29.76	21.71
Fencing gloves	2.978	2.654
Halter headstalls	2.35	1.068
Harness:		
Wire cart	70.85	60.39
Artillery, wheel	135.42	109.71
Artillery, lead	109.10	93.55
Pouches for telescopic musket sight	2.79	2.04
Neck-yoke pads	.40	.34
Bridle reins, model of 1902	1.16	1.13
Connecting straps, Artillery harness	.64	.40
Lead-rein roller straps	.164	.088
Saber straps	.178	.14
Stirrup straps, polo	1.60	.74
Sobrejalmas	4.88	3.75
Scabbards for Hospital Corps knife	1.43	1.18

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SPRINGFIELD ARMORY.

The armory was commanded during the year by Col. Stanhope E. Blunt.

Grounds and buildings.—The improvement to roadways adjacent to the Government inclosures which, while the property of the United States, are yet used mainly as public streets of the city of Springfield, and which were in progress at the date of my last annual report, have been completed. One of the streets—Mill Street—still requires improvement. A proposition to transfer it to the city of Springfield in return for a reduction of water rate, not being favorably considered by the city, its improvement, if made, must be by the General Government. It is at present in poor condition, and while of no use to the armory it is extensively traveled.

The new extension to the shops as a dry house for lumber has been completed, is in operation, and proves very satisfactory. The second story of this building is occupied by a welfare room for use of employees who reside at such a distance from the armory that they can not go home for their noon meal. It has been suitably furnished, and is also used by two associations of armory employees for holding their stated meetings.

Machines.—Fifty-three machines of various designs have been installed as additions to the plant or in replacement of obsolete machinery during the year. A number of these pertain to the proposed new plant for the manufacture of the automatic pistol, caliber .45, model of 1911.

Manufactures.—During the year 35,175 United States rifles, caliber .30, model of 1903, were manufactured, and 2,618 were cleaned and repaired. There were also manufactured 56,175 bayonets; 1,000 bolos, model of 1909; 13,000 bolos, model of 1910; and 11,000 hospital corps knives, and 450 noncommissioned officer's swords; also a considerable number of sets of spare parts for the service rifle, for the Maxim automatic machine gun, caliber .30, model of 1904, and for the automatic machine rifle, caliber .30, model of 1909, and various other articles.

The preparation of the tools, fixtures, etc., for the manufacture of the automatic machine rifle, caliber .30, model of 1909, was completed,

and 200 of these rifles have been manufactured. This model of automatic machine rifle has now been issued to the mobile army to replace the Maxim automatic machine guns formerly used. The manufacture of this rifle necessitated the installation of a complete plant for the fabrication of the metal feed strip. The plant installed has a capacity of 1,000 feed strips per day of 8 hours.

The preparation of tools, fixtures, etc., for the manufacture of the automatic pistol, caliber .45, model of 1911, has been undertaken, and it is now expected that the plant for this pistol will be installed by January 1, 1913, when the fabrication of these pistols can commence. It will be capable, in connection with a portion of the present plant of the Springfield Armory, of the manufacture of 40 automatic pistols per day of 8 hours. A few of the machines of the rifle plant would, however, be required for the manufacture of rifles if the maximum output of 500 rifles per day were required.

The work of overhauling and equipping with new sights all Maxim automatic machine guns, caliber .30, model of 1904, in service and store, also the rechambering and resighting for model of 1906 ammunition of all Gatling guns and Colt automatic machine guns in service and in store, has been completed.

Cost of manufactures.—During the year a spare-part container and its contents have been added to the service rifle at a cost of 21 cents per rifle, but as several improved methods of manufacture have also been introduced, this increased cost has been compensated for, and the final cost of manufacture of the rifle remains unchanged.

During the year a more systematic method of routing work through the shops has been adopted and has resulted in a material increase in the amount of work done by the workmen and a consequent decrease in cost of manufacture. As no piece tariff prices have been changed during the year increased work done by the workmen has resulted in an actual increase in the amount earned. The above has, however, resulted in a material reduction in the number of working hours required to complete a rifle, namely, from 24 to 17, the latter time comparing most favorably with the time required for similar work in other shops.

It is understood that the new plant recently installed by the Pratt & Whitney Co., for the Australian Commonwealth, for the manufacture of the British service rifle was based upon 19 working hours per rifle, and the Enfield plant in England requires about 27 hours for the same work. While the British service rifle and ours are different in design, yet the amount of mechanical work necessary to produce it is practically the same, and it is therefore convenient for comparison. In designing the Australian plant the experts of the Pratt & Whitney Co. visited practically all of the small-arms makers in this country and abroad, and as a result the Australian plant is supposed to be as nearly perfect as mechanical skill and genius can make it.

In comparing the cost of manufacture at this armory with the cost of similar matériel purchased from outside establishments, it is interesting to note the cost of the automatic machine rifle, caliber .30, model of 1909, as manufactured here and as purchased from civilian establishments both in this country and abroad. A rifle of this model, complete in every respect, including the royalty and its proportionate part of spare parts, accessories and arm chests, except

articles supplied from other arsenals, costs as follows: Springfield Armory, $559.28; Colt's Patent Fire Arms Manufacturing Co., $746.22; and Benét & Mercié, $915.81.

Experimental work.—During the year 31 Maxim automatic machine guns, caliber .30, model of 1904; 55 Gatling guns, 28 Colt's automatic machine guns, and 200 automatic machine rifles, caliber .30, model of 1909, have been proof-fired and targeted; 115 telescopic musket sights, model of 1908, have been tested and adjusted to automatic machine rifles.

Several comparative tests of Frankford Arsenal and Union Metallic Cartridge Co.'s ammunition for the automatic pistol, caliber .45, model of 1911, also tests of Frankford Arsenal ammunition for the automatic pistol, with cases made from fired and scrap material, have been made and reports rendered. Firings to determine the accuracy and penetration of the automatic pistol, caliber .45, model of 1911, were made for use in the preparation of a handbook on this arm.

Endurance tests of automatic machine rifle, caliber .30, model of 1909, of Colt and Springfield Armory manufacture, have been made, involving the expenditure of more than 200,000 rounds of service ammunition.

Erosion tests of various steels for use in gun liners for seacoast cannon have also been made and reports submitted.

Under the supervision of different boards of officers the following-named articles have been tested and reports thereon rendered: Butt sight, designed by an officer of the French Army; Roth automatic pistol; Corumboef silencer; Moore silencer; Colt D. A. police positive revolver, caliber .32; Glisenti automatic pistol; Serco score timer; Lyman micrometer sight.

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FRANKFORD ARSENAL.

This arsenal was commanded during the year by Lieut. Col. George Montgomery.

Fiscal and property transactions.—The estimated value of the ordnance property manufactured at this arsenal during the year amounted to $2,266,377.23, and the estimated value of the ordnance material completed during the year to $2,306,580.28. The total number of money vouchers for the year amounted to 3,469, which covered the disbursement of $2,325,859.21. Orders covering the purchase of property amounted to 3,822. The number of manufacturing orders for the year amounted to 1,000, and the number of property vouchers amounted to 4,600. The total amount of property shipped both for issue to the service and reworking into materials for manufacturing purposes was 10,788,473 pounds. The total weight of materials and supplies received at the arsenal aggregated 30,443,281 pounds.

Administration and shop management.—The general expenses pertaining to the administrative and storage divisions have been symbolized and are now distributed according to a well-defined classification. The overhead expenses for the manufacturing division pertaining to the 28 shops thereof have been symbolized and defined for each shop so that the prorata share thereof is included in the cost of articles manufactured therein. A system of paying

employees has been very generally introduced in the manufacture of small-arms ammunition which consists in fixing a task for each employee which insures him a bonus if he completes it and a premium if he exceeds the task. Straight piecework has been very generally introduced in the manufacture of artillery ammunition. Both systems have given very general satisfaction to the employees.

The overhauling of stock has been continued throughout the year, the principal undertaking being the symbolization and classification of about 7,000 patterns.

A more intelligent inspection of purchased materials has led to the procurement of higher grade articles for manufacturing purposes than were obtained heretofore.

A system of shop management was introduced in the latter part of the previous year to direct and control the manufacture of small-arms ammunition. The introduction of this system and the making of improvements in the design and grouping of machinery led to a very substantial saving in the cost of small-arms ammunition, amounting to about $250,000, the rate of saving being higher during the latter part of the year. This system of shop management has been extended to an accurate accounting for shop tools used in this manufacture. During the latter part of the year the Taylor system of shop management was introduced for the planning of manufacture of instruments.

The decrease of manufacturing work at this arsenal is shown by the sucessive number of employees at the close of each year, as follows: 1908, 2,030; 1909, 1,996; 1910, 1,664; 1911, 1,571; and 1912, 1,412.

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Manufacture of small-arms ammunition.—The work during the year involved the manufacture of 61,826,540 ball cartridges, 209,120 guard cartridges, and 601,680 dummy cartridges for the service rifle. There were also manufactured 5,991,760 ball cartridges for the caliber .38 revolver; 1,511,920 ball cartridges for the caliber .45 revolver, and 9,777,878 ball cartridges for the caliber .45 automatic pistol. In all, there were manufactured 80,301,458 rounds of small-arms ammunition, a reduction in output from that of the preceding year of over 1,600,000.

The accuracy of the rifle ammunition compares most favorably with that procured from private manufacturers, having been excelled by only one private company. The average accuracy for all rifle ammunition manufactured during the year showed a mean radius of 4.132 inches at 500 yards. This is less than obtained last year, but is probably due to selecting the samples by a more representative method than prevailed heretofore. The official acceptance tests of 8,000,000 rounds of rifle ammunition procured from outside concerns gave an average mean radius of 5.210 inches at 500 yards. The average mean radius for the acceptance firings of caliber .38 revolver ammunition for the year was 1,788 inches at 150 feet, which represents a marked reduction from the preceding year. This is probably due to the use of fired cartridge cases in the manufacture of this ammunition. This accuracy is less than the average accuracy of the revolver ammunition procured from outside concerns.

The average cost of the manufacture of rifle-ball cartridges was $22.89 per thousand, as compared with $26.95 last year, which represents a saving of about $250,000. An order for 10,000,000 ball

cartridges was carefully manufactured, using new materials throughout, and the cost was $22.50 per thousand, which represents an annual rate of saving of nearly $275,000. The cost of similar ammunition procured from outside concerns was $35.76 per thousand. Ammunition for the caliber .45 automatic pistol was manufactured for the first time at a cost of $14.85 per thousand. Against this order were charged all alterations in machines, and the manufacture of gauges, punches, dies, etc., required specially in this manufacture. The cost of similar ammunition procured from an outside concern was $19.50 per thousand, so that a saving was made in the manufacture of this ammunition of about $47,000.

Manufacture of artillery ammunition.—The principal manufactures of artillery ammunition were 7,342 rounds of fixed common steel shell and 4,500 cartridge cases for the 3-inch (15-pounder) gun; 16,160 common shrapnel for the 3-inch field gun; 66,925 fixed common steel shell and 39,729 cartridge cases for the 1-pounder subcaliber gun; 5,500 cast-iron shot for the 2.95-inch subcaliber gun; 6,118 21-second combination fuzes; 993 31-second combination fuzes; 1,120 fixed common shrapnel for the 2.95-inch mountain gun; and 708 fixed common shrapnel for the 4.7-inch gun. Although the output of artillery ammunition was probably one-quarter of the capacity of the plant, nevertheless the costs compare most favorably with those of preceding years. The accuracy of the 21-second combination fuze has shown a superiority over those of the only outside concern with which it entered into competition. A 3-inch high-explosive shrapnel has been developed, recent tests of which have given excellent results. A 30-second combination fuze for the 3-inch mountain howitzer has been developed and has given satisfactory results. Additional automatic machinery has been purchased with the object of increasing the capacity of the arsenal for the manufacture of artillery ammunition.

Manufacture of instruments.—The principal manufactures of instruments consisted of Warner and Swasey azimuth instruments, model of 1910; panoramic sights for 3-inch field gun; range quadrants; sextant telemeters; elevation quadrants; wind-component indicators; deflection boards for mortars; submarine plotting boards; and fire commanders' plotting boards. Considerable progress has been made during the year in making all instruments dust and moisture proof. Twelve 360° plotting boards of the type developed at this arsenal are now under manufacture for service.

Although the plant engaged in the manufacture of instruments operated at less than one-half of its capacity, the average costs of the output are slightly less than those of the preceding year.

Manufacture of miscellaneous articles.—The principal miscellaneous manufactures have been of pressure-gauge outfits, specimen boards of fuzes, decapping and cleaning tools for small-arms cartridges, and paints. The chemical laboratory made tests of smokeless powders representing about 575,000 pounds.

WATERVLIET ARSENAL.

This arsenal was commanded during the year by Lieut. Col. W. W. Gibson, who is also a member of the Board for Testing Rifled Cannon.

Manufactures.—The amount of work done at the Watervliet Arsenal during the year was slightly in excess of that for the preceding year, the number of employees having increased from 243 in July, 1911, to 284 in June, 1912.

Movement of freight.—The total tonnage handled during the year was slightly greater than during the preceding year, that received being 12,550,537 pounds and that issued 2,678,248 pounds.

Shop management.—Many of those features of the so-called "Taylor system" of shop management successfully tried out at Watertown Arsenal have been installed and are now in successful operation at the Watervliet Arsenal. The chief features thus far introduced are the engineering division and the planning room.

The engineering division.—The engineering division has greatly simplified the issue of all orders to manufacture. The shops are now given the exact number of parts to be manufactured, repaired, or altered; the exact number to be turned into the storehouse, and the condition in which they are to be transferred. This insures uniformity in all cases in shop records, property returns, and reports of operations. The proper kind of material is promptly obtained in sufficient amounts to complete all the work ordered. Inferior material rejected is replaced as promptly as possible, and the work proceeds in a more orderly manner than under the previous system of management. The drawings, plans, and specifications issued to the shops are kept properly revised, and those superseded by any changes are promptly withdrawn, to prevent confusion or error. When an order is issued the necessary funds have been provided for its execution; orders for material have been issued; and complete instructions, prints, and authority for drawing the material accompany the order. This division has demonstrated its value and has become a permanent feature of the shop management.

The planning room.—The planning room of the new system of shop management has been installed and is in successful operation. The preliminary work in the planning room and cost division, including selection of the personnel, was completed and the system put in operation on December 1, 1911. Since that date all new orders for work in the machine shop and the smith shop have been planned and routed under the new system. The greater part of the old orders which were in progress on that date were not routed. In this way the foremen and workmen have taken up the new features gradually, and as a result there has been no confusion. With only a few exceptions all of the work now in the shops is routed under the new system.

Overhead charges.—When the new system was put into effect the method of distributing overhead charges was changed by the introduction of a machine rate. These charges are now distributed for each operation in proportion to the value of the equipment, the cost of its operation, floor space occupied, etc. This will have the effect in general of increasing the cost of large guns and decreasing the cost of small ones. Relining operations on large guns being work done almost entirely on large and expensive lathes will bear a comparatively high proportion of the overhead charges. As orders are completed entirely under the new system comparisons can be made with former costs, but the change in the method of distributing overhead charges should also be taken into consideration in making

such comparisons. Only small articles have been completely manufactured under the new system, so that proper data for comparison of the costs of guns as a whole, under the old and new systems, are not now available. A number of cases, however, have been taken from the cost sheets which seem to indicate a tendency of the new system to greater efficiency.

The introduction of the new system has met with no opposition from the workmen. Its successful installation, without confusion or difficulty, is due to the combined efforts and loyal cooperation of the clerks, foremen, and other employees. The time-study and premium system has not yet been taken up, but will be considered at a later date, when the operating features of the new system shall have been in use for a longer period and any possible defects eliminated.

Work completed.—There were completed during the year three 14-inch guns; six 12-inch mortars, three 6-inch guns, sixteen 4.7-inch guns, thirteen 3-inch field guns, and five 3-inch mountain howitzers. Liners were added to one 12-inch Army gun and to four 12-inch Navy guns. Eight 6-inch Navy guns were relined and rehooped. Much additional work was done on uncompleted guns, in the manufacture of breech mechanisms for dummy guns to be mounted in the armories of the Organized Militia; and in the manufacture of spare parts for breech mechanisms, caps for projectiles, etc.

The total amount of funds disbursed during the year was $308,192.45, being approximately $56,000 more than during the preceding year.

WATERTOWN ARSENAL.

This arsenal was commanded during the year by Lieut. Col. C. B. Wheeler, who is also armament officer of the Northern Armament District, and a member of the Board for Testing Rifled Cannon.

The amount of work done during the year, as measured by total expenditures, has been somewhat greater than that of the previous year. The total number of employees at the end of the year was 605.

Power plant.—Proposals have been invited for the construction of the new power plant which was authorized by Congress, and it is expected that the work of construction will commence early in the coming fiscal year. This plant has been very much needed and is considered to be a profitable investment.

Plant improvements.—Improvements in the manufacturing plant have been made as funds have permitted. An acid open-hearth furnace of the tipping type, and of 15 tons capacity, has been installed in the foundry, but is temporarily not in operation, due to lack of work. This furnace, in connection with the 2-ton Tropenas converter, is a valuable asset and strengthens the position of the department so far as the steel-casting industry is concerned. Oil-burning forges and furnaces have been installed in the smith shop and are giving satisfaction. This installation is still in progress, and when completed will add to the sanitary condition of this shop, and, it is expected, will also increase the output. The type of burner found most satisfactory is a combined high and low pressure one, in which the oil is atomized by a small amount of air at 25 pounds pressure, while air for combustion purposes is supplied under a pressure of only 6 ounces. With the exception of this new installation, the equipment of this shop is very unsatisfactory, to which fact reference has been made in previous reports.

In the woodworking department the installation of an exhaust shaving system and of a small lumber drier has secured the results which were promised when the improvements were undertaken.

System of management.—At the end of the last fiscal year the preliminary work of introducing the new system of management had been completed. This preliminary work consisted in perfecting arrangements by which the movements of pieces through the shops can be directed in such a way that they will have the necessary operations performed upon them and be received at the various assembling places at the time and in the order required, consequently from the beginning of manufacture each component part is following a well-considered schedule laid out in advance for it. This requires that duties be functionalized, machines standardized, and methods introduced to remove to the greatest possible extent any obstacles to maximum output. The final step in the system—the adoption of measures to increase the output of the individual by instruction and the stimulation to good endeavor by increased compensation—was therefore undertaken at the beginning of the year, at which time it was considered that both the machine shop and the foundry were in a condition to permit of the introduction of time studies and the premium system of payment. A time study is made for the purpose of measuring as accurately as possible the reasonable output of a workman—an output that can be accomplished day in and day out by the average man without ill effect, but with comfort and satisfaction to himself. The proper product of a fair day's work is not generally well known, but it can be accurately determined. For this purpose, in the beginning, time studies are necessary; but these become less so as the amount of accumulated data increases, and eventually in any shop practically all work can be analyzed and measured by reference to previously accumulated and recorded data without the use of any time studies whatever. The object in making an accurate measurement of output in the beginning is to forestall any tendency that might otherwise exist, and which generally does exist when these measurements are not made accurately, to reduce a workman's compensation when it is noted that his task is too easy and his compensation is too high. The premium system of payment contemplates that a workman by accomplishing the prescribed output shall earn one-third more than his regular daily wage, the latter, however, being assured him whatever his output, accompanied by a guaranty that the rate of production having once been set will never be changed. Should a workman have a larger output than that prescribed, he earns a correspondingly larger percentage as a premium, which has no limitation other than that determined by output. A year's experience with time studies and the premium system of payment has shown that these methods are advantageous to both the Government and its employees, for while large savings have been made they have been secured not at the expense of the workmen but, on the contrary, by noticeably increasing their compensation.

NEW YORK ARSENAL.

This arsenal was commanded during the year by Col. O. B. Mitcham, who also performs the duties of inspector of ordnance, chief ordnance officer of the Eastern Division, and armament officer of the Central Armament District.

The arsenal is mainly a purchasing and shipping agency, without any special facilities for manufacturing or repairing ordnance stores, but, from its position near New York City, is considered of great value as a place of storage for arms and equipments of troops and as a depot for equipping troops, especially for military expeditions in time of war.

During the year 17,231 packages of stores were received, weighing 1,827,511 pounds. The number of issues was 1,906, contained in 11,306 packages, weighing 1,788,340 pounds. The amount of funds disbursed during the year was $191,144.

AUGUSTA ARSENAL.

This arsenal was commanded by Capt. Adam F. Casad from July 1 to July 29, 1911; by First Lieut. Charles T. Harris from July 29 to August 29, 1911, and by Col. J. W. Benét from the latter date to the close of the fiscal year. The commanding officer is also armament officer of the Southern Armament District.

The shops were employed in capping, grooving for base covers, and preparing for fuzes A. P. and D. P. projectiles, and in banding A. P. projectiles, for which work a 2,500-pound pneumatic hammer was purchased and installed. Other important items of work done in the shops were the manufacture of targets and parts of targets for seacoast artillery practice, the repair of parts of seacoast armament, retinning of equipments, and re-tiring with rubber of ammunition truck wheels..

An oil house provided for by an appropriation of $2,500 in the sundry civil act, approved June 25, 1910, was completed during the year. An addition to the carpenter shop, for storing projectiles and assembling and painting seacoast targets, was also completed.

The disbursements for the year, exclusive of sales and deposits, amounted to $76,878.56. The number of receipts and issues of ordnance stores during the year was 999. The stores received on quartermaster's bill of lading amounted to 2,827,733 pounds, and the stores issued amounted to 985,482 pounds.

BENICIA ARSENAL.

This arsenal was commanded by Lieut. Col. (now Col.) J. W. Benét, from July 1 to 16, 1911, and during the remainder of the fiscal year by Lieut. Col. C. L'H. Ruggles, who is also chief ordnance officer of the Western Division and armament officer of the Western Armamant District.

This arsenal is the depot of supply for the Regular troops and the Organized Militia within the territorial limits of the Western Division. The principal items of work done in the shops during the year were the modification of armor-piercing projectiles; the manufacture of targets and target material for seacoast Artillery, mobile Artillery, and small-arms target practice; the assembling of powder charges and fixed ammunition, and the manufacture of parts required for repairs and replacements for seacoast Artillery matériel. Eleven thousand meat cans were retinned during the year, and small lots of leather equipments were manufactured.

The projectile loading and storage buildings referred to in my last annual report have been practically finished. It is expected

that the work will be completed at an early date. Proposals have been received for the cranes for the buildings and their delivery is expected during the summer. The plant for repairing small arms at this arsenal has been renovated and remodeled to adapt it to the repair of the present service rifle, and the repair of arms turned in by troops will shortly be inaugurated.

Western Armament District.—Work upon the armanent in this district has progressed satisfactorily and a large part of the alterations ordered during the past year have been completed. The principal work remaining to be done at present consists of the alteration of armor-piercing projectiles; the completion of the remodeling of 10-inch disappearing carriages, model of 1894, into the model of 1894 M1; and the remodeling of the recoil and counter-recoil controlling mechanisms of two 10-inch disappearing carriages, all around fire, model of 1896, at Fort Stevens, Oreg.

The disbursements for the year amounted to $155,843.17. The number of requisitions received from the service during the year was 1,378. The number of vouchers covering store isssued was 2,403, and the number covering stores received was 604. The number of bills of lading issued during the year was 1,024, and the weight of the stores issued was 4,026,506 pounds. The weight of stores received was 2,506,302.

SAN ANTONIO ARSENAL.

This arsenal has been commanded during the year by Col. Chas. H. Clark, who is also in charge of a Field Artillery district.

The principal operations have been confined to the supply of the Regular troops serving in the department, the supply of the organized militia in the southwest, and the maintenance of the Regular and militia batteries in the district.

PICATINNY ARSENAL.

This arsenal was commanded during the year by Lieut. Col. Odus C. Horney. The Army Powder Factory is located at this arsenal, which is also a depot for the storage and preparation of powder, ammunition, and high explosives. Approximately 463,000 pounds of cannon powder and 106,000 of caliber .30 small-arms powder and other small grained powders were manufactured during the year.

A new office building and new chemical laboratory building were completed during the year, and a new magazine building will be completed shortly. About 5,000 railroad ties have been cut during the past year, and the work of creosoting these ties is being carried on continuously. Most of these ties are being shipped to the Sandy Hook Proving Ground, and the Watervliet and Frankford Arsenals.

The total disbursements during the year amounted to $693,107.39; the number of receipts and issues of ordnance stores was 759; the weight of stores received and issued, exclusive of large quantities of building material and material for manufacturing purposes, was 12,308,641 pounds. The number of employees on June 30, 1912, was 294.

MANILA ORDNANCE DEPOT.

The depot was commanded during the year by Maj. J. W. Joyes, who is also chief ordnance officer of the Philippines Division and armament officer of the Philippines Armament District.

Employees.—The authorized clerical force numbers 16. Other Americans employed are 9 foremen and leading men in depot shops and storehouse and 2 armament machinists at forts. The other employees are natives, averaging about 160 in number.

Volume of business.—One thousand nine hundred and fifty-seven ordnance property returns were received and recorded and 1,734 given preliminary examinations, all irregularities being investigated by correspondence. Like preliminary examination was made of the two large semiannual returns of the depot. Six hundred and two reports of survey of ordnance property in the division were received and irregularities therein investigated; 2,407 requisitions audited; 3,278 issue vouchers and 1,737 receipt vouchers accomplished, covering 2,391,000 pounds of incoming and 2,720,000 pounds of outgoing stores; 539 purchase orders were issued.

Disbursements.—The total amount of funds disbursed, transferred, etc., during the year was $126,370.19. The sales of ordnance and ordnance stores during the year to officers, the insular government, and other departments amounted to $38,965.24.

Work at the depot.—The work of the past year has included the repair of a large quantity of matériel turned in for that purpose and the manufacture of targets and target materials for small-arms, mobile, and seacoast artillery practice, and of miscellaneous stores for sale or issue. The care and inspection of machine guns and of mobile and seacoast artillery matériel, and the systematic surveillance of ammunition in the Philippines Division have involved much labor and responsibility. The specially-packed war reserve enabled the depot to equip promptly the force sent to China and would have permitted the equally prompt equipment of a much larger expedition.

ORDNANCE BOARD.

The membership of the board during the year was as follows: Col. Rogers Birnie, Lieut. Col. E. B. Babbitt, and Maj. Jay E. Hoffer, Ordnance Department, and Capt. H. J. Hatch, Coast Artillery Corps. Col. S. W. Roessler, Corps of Engineers, is a member on matters involving engineer work, and Maj. Samuel E. Reber, Signal Corps, is a member on matters connected with aeronautics.

The board, which is a permanent experimental body, during the year submitted 18 reports relating to guns and carriages, 19 relating to smokeless powders and explosives, 10 relating to fuzes and primers, 24 relating to projectiles, and 51 relating to sights, fire-control instruments, and miscellaneous objects.

ELEVEN YEARS' ADMINISTRATION OF THE ORDNANCE DEPARTMENT.

The undersigned was appointed Chief of Ordnance in November, 1901. He has now, after nearly 11 years' service in that office, been relieved from the command of the Ordnance Department, and assigned to other duty. The interval is sufficiently long to justify

something of a review of the work of the Ordnance Department, which may have a measure of historical value.

Personnel.—At the beginning of the period the department was operating under the detail system as established by the act of February 2, 1901. This system involved the detail of officers to the various grades in the department from the same grades in the line, and a compulsory interval of two years between successive details for officers below the grade of lieutenant colonel. The law prescribed that details should be made under such system of examinations as the President might direct, and this department, in the desire to keep up its standard, conducted examinations quite similar to those which had preceded transfer to the department under the law in force before the act of 1901. As no advance of grade was permitted upon detail, and as officers under the system served only two-thirds of their time in the Ordnance Department, in grades below that of lieutenant colonel, the stimulation offered was not sufficient to induce officers to prepare for the examination in sufficient number for the needs of the department, and it was not found possible to recruit the department to its authorized strength. During the first year and a half there were only 6 applicants for 15 vacancies. Of these only 3 passed, and for the 12 remaining vacancies there were no applicants. This state of affairs continued until, by strenuous and persistent effort, such change in the law was secured as to establish promotion and elimination of officers of the department upon a merit system. By the act of June 25, 1906, officers detailed in accordance with the general principles of the act of 1901, are now eligible for selection from the grade below, thus constituting a promotion, and are selected by boards of officers with only such reference to seniority as the judgment of these boards shall indicate to be for the best interests of the service. At the expiration of tours of duty in the Ordnance Department officers are subject to elimination therefrom by the omission of the selecting board to recommend them for redetail in the department. Officers are thus at all times in competition, both for promotion and for continuance of detail in the department, with the incentive of the prospect of promotion to higher grade, sometimes immediately, sometimes in the near future. Officers of no other branch of the Army or Navy of the United States pass their service under these competitive conditions. The act of 1906 also provided that the compulsory interval between successive details should cease with the grade of major.

The system as thus modified has worked satisfactorily. The department has now serving in it 7 detailed officers of the grade of major. One of these is commissioned as major in the line, while the others are commissioned as captains in the line, and are thus serving in a higher grade. There are now 25 captains serving by detail, of whom 2 are also commissioned as captains in the line and 23 are commissioned as first lieutenants in the line. There are 23 first lieutenants serving by detail, of whom 10 are commissioned as first lieutenants in the line and 13 are commissioned as second lieutenants in the line. In the selections for advanced rank the boards have always laid great stress upon seniority, but have not been entirely guided by it. Of the officers detailed to the grade of major, for instance, the selection has sometimes fallen upon the senior in rank in the Army at large; sometimes upon the senior in service in the Ordnance Department;

sometimes upon the officer of longest service in the Army, and sometimes upon the oldest in years. There has been no instance thus far in which, in the selection for the grade of major, all forms of seniority have been ignored.

Instruction of officers.—In all the previous history of the Ordnance Department its officers had acquired their education as specialists, that is, as engineers of ordnance, as best they might; teaching and training themselves in accordance with the haphazard opportunities offered them by their various duties. The result was what was to be expected; only a portion of the officers of the department were able to handle the engineering work connected with the design, or even with the manufacture, of guns, carriages, projectiles, fuzes, powder, etc. A theoretical course in the application of mechanics, chemistry, and electrics to ordnance construction has been established at the Sandy Hook Proving Ground, and is pursued there for one year, in connection with the proof and experimental work which is continuously going on. In the good work of several officers in connection with this course that of Maj. Tracy C. Dickson, Ordnance Department, is conspicuous. A practical course in the machine shop, foundry, forge shop, and testing laboratory has been established and is pursued for one year at the Watertown Arsenal. During this course officers work as mechanics from 8 a. m. to 5 p. m. in overalls, and in all other respects as do the regular workmen. At the end of the year they are not only fair artisans, but they are capable of taking the employee's view, as well as that of the employer, in regard to many subjects, and have a very fair idea of what eight hours' work per day means. At the Springfield Armory, also, officers are given a three-months' course in the manufacture of the musket, which carries them through the practical operations, which they perform with their own hands. At the Watervliet Arsenal a few officers have been given a special course in electrics at the near-by works of the General Electric Co., by the courtesy of that company, which has been found very useful to them and to the department. At the Picatinny Arsenal a few have been given a practical course in the manufacture of powder.

At the Watertown Arsenal, also, a number of officers have been given a course of instruction in the administrative duties of the department. These duties center about the office of the commanding officer, and concern directions and communications which usually find their way, either to higher authority or to subordinates or to the business world, over the desk of some clerk. The officers under instruction take the desk of each clerk, in succession, for a long enough time to become thoroughly familiar with its duties, and thus acquire a knowledge of the general business methods of the War Department, including the making of contracts, preparation of vouchers, disbursement of funds, and the accountability therefor and for property, which clears away the mystery which oftentimes makes these subjects a lifelong bugbear to officers who have not had opportunity to familiarize themselves with them. The course lasts about three months. In the establishment and successful conduct of these practical and administrative courses great and serviceable interest has been taken by the commanding officers of the arsenals, Lieut. Col. C. B. Wheeler, Col. S. E. Blunt, Lieut. Col. W. W. Gibson, and Lieut. Col. O. C. Horney, and by Majs. C. C. Williams and W. G.

Penfield, assistants at the Watertown Arsenal and the Springfield Armory, respectively.

Cost keeping and accounting.—Such progress as to be almost revolutionary has been made in the systemization of the expenditure of public funds and in accounting for them and in the accurate determination of costs of manufacture. The unexpected and embarrassing deficiency of funds for allotted purposes, which was the natural result of underestimates and looseness of account keeping and was the cause of grave and, in one or two instances, of particularly anxious concern, now no longer exists and is believed to be henceforth impossible. Most intelligent and faithful work in the preparation of instruction orders, which have served as manuals of the department's business methods, has been done by Lieut. Cols. George Montgomery and W. S. Peirce, successively in charge of the Finance and Property Divisions of the Ordnance Office.

In connection with the increased attention paid to the stock of materials and the closer scrutiny of costs, methods of manufacture have been so improved that the product has been greatly cheapened. The commonly received statement that the Government's manufacture is so expensive that private establishments can furnish its supplies at less cost than it could make them for itself, and include their profits besides, has been reversed and is now never advanced with reference to the Ordnance Department. The costs of manufacture of the various classes of articles which are fabricated by the department have been successively reduced until they now in some instances are less than two-thirds of what the Government has to pay private manufacturers for similar articles. Examples of advantageous comparison of the cost of the department's product with the price paid to private manufacturers for similar articles are given elsewhere in this report, and have been frequently cited in preceding reports. The costs compared have included all overhead and indirect charges such as interest, depreciation, pay of officers and enlisted men, etc.

Administration.—An improved system of industrial management, known as the "Taylor system," has been in course of introduction at the arsenals since the spring of 1909. The better systemization and more orderly processes which are characteristics of this system have already resulted in great saving in manufacture, and the encouragement of workmen to increased output, by wisely bestowed rewards, has still further reduced costs and increased the product at the one arsenal at which these last-mentioned features have been put in practice, and bids fair to greatly improve the relations between the workmen and the management by rendering possible the just determination of a proper regard for a fair day's labor. Further reference to this subject is made elsewhere in this report, and also in my annual report for last year. The Ordnance Department, of all the organizations of the Government, is the only one which has thus far taken steps to put this system into effect.

A general index to the reports of the Chief of Ordnance, covering the years from 1867 to 1911, both inclusive, has been prepared in this office and sent to the Public Printer for publication.

A general index to the reports of the Tests of Metals, etc., covering the years from 1881 to 1911, both inclusive, has been prepared at the Watertown Arsenal and arranged in this office for publication.

Rearmament of troops.—The Field Artillery of the Regular Army and Organized Militia have been completely rearmed with the new 3-inch gun, which has been successful in service. Heavier types of field artillery have been designed and constructed and a few batteries issued. Batteries of a new mountain gun are under construction for issue to the service. The design and manufacture of field artillery of other types than that of the 3-inch gun were delayed by the shortage of officers which existed before the modification of the act of 1901, above described.

The Regular Army and Organized Militia have been rearmed with the magazine rifle, model of 1903, and the ammunition has been altered to that of the model of 1906. In all three of these changes the United States Army, although not the first, was well to the fore in its equipment with new arms.

A new automatic machine gun has been adopted and issued to the service. In the adoption of this latest type of gun the United States Army was ahead of those of most European nations.

New manufactures.—A new armory, with a capacity of 250 rifles per day of eight hours, has been put in operation at the Rock Island Arsenal, although at less than its full capacity, because of peace-time-conditions. Owing to its fortunate possession of skillful and educated officers and experienced and well-trained foremen and operators, the department was able to put the new plant into operation with a smoothness and lack of hitches and extraordinary expense which are believed to be rare in the establishment of such extensive industries. The Springfield Armory was the parent establishment which furnished a large amount of the experience and skill which were required in the establishment of the new plant, including the important services of Capt. (now Lieut. Col.) Jno. T. Thompson, assistant in charge of the installation of the manufacture under Col. S. E. Blunt, himself also an officer with previous experience at the Springfield Armory.

A smokeless powder factory has been established at the Picatinny Arsenal, with a capacity of 9,000 pounds per day of 24 hours. The Ordnance Department had never before manufactured powder, and therefore it is particularly gratifying that, from the very beginning, the output of the new factory has proven to be as good as that furnished by the most experienced powder companies, and a little cheaper in manufacture. The factory has been constructed and operated under the command of Lieut. Col. O. C. Horney.

A larger caliber of seacoast gun than any heretofore in use in the United States has been produced, and is expected to yield the power of the 12-inch gun, which had theretofore been the heaviest employed, with the economy of very considerably longer life. The 14-inch disappearing carriage for use with this gun has been produced and tested.

The extensive use of wire in the construction of guns of the larger calibers has been adopted, in accordance with the department's designs, with a consequent cheapening of manufacture of something like 25 per cent.

The production of telescopic sights and fire-control instruments has been established at the Frankford Arsenal, constituting a new branch of manufacture for the department. The results have been very satisfactory in the quality of the optical and other instruments

produced, and in the cost of the product as compared with that of private manufacturers.

In the design and manufacture of gun carriages and fire-control instruments a great debt is owing by the department to the able and tireless work of Maj. J. H. Rice, in charge of the branch of the Office of the Chief of Ordnance which relates to these matters, while the anxious watchfulness and painstaking care which are necessary to produce good results and to prevent accidents with artillery ammunition have been given without regard to hours by Maj. Jay E. Hoffer and Maj. Edward P. O'Hern.

The manufacture of machine guns, never heretofore carried on by the Ordnance Department, has been inaugurated at the Springfield Armory, and the cost of these guns has been considerably reduced below the price for which they can be purchased from private manufacturers.

There is in course of installation at the same armory equipment for the manufacture of pistols, which have heretofore been entirely purchased from private manufacturers. It is hoped that the same comparative economy will result as was fortunately the case with reference to other articles whose manufacture has been taken up by the department.

The arms and other supplies for which armies in campaign would be dependent upon the Ordnance Department are, with the exception of field artillery and its ammunition, on hand in satisfactory quantities, and have been subjected to such orderly arrangement and location that the needs of rapid expansion and mobilization could be efficiently served. Lieut. Col. Jno. T. Thompson, senior assistant in the Ordnance Office, has had direct charge of this branch of the work, which he has brought to a reassuring stage of advancement.

Very respectfully,

WILLIAM CROZIER,
Brigadier General, Chief of Ordnance.

The SECRETARY OF WAR.

REPORT OF THE CHIEF OF ENGINEERS.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, October 8, 1912.

To the SECRETARY OF WAR.

I present for your information the following report upon the duties and operations of the Engineer Department for the fiscal year ending June 30, 1912.

OFFICERS OF THE CORPS OF ENGINEERS.

The number of officers holding commissions in the Corps of Engineers at the end of the fiscal year was 194, a net increase during the year of 4.

Since July 1, 1911, the Corps of Engineers has lost three of its officers—Col. Walter L. Fisk, who was retired from active service, upon his own request, on July 10, 1911, under the provisions of section

1243, Revised Statutes, after more than 37 years' service; Col. Thomas L. Casey, who was retired from active service, upon his own request, on March 1, 1912, under the provisions of section 1243, Revised Statutes, after more than 36 years' service, and Maj. Edwin R. Stuart, who was appointed professor of drawing at the United States Military Academy, and vacated his commission to accept the appointment on October 4, 1911.

There were added to the Corps of Engineers during the fiscal year, by appointment from civil life, one probational second lieutenant, whose commission dates from April 23, 1912, for a period of one year, and by the assignment of graduates of the United States Military Academy, six second lieutenants, whose commissions date from June 12, 1912.

On the 30th of June, 1912, the distribution of officers of engineers, according to their duties, was as follows:

Chief of Engineers, in command of the Engineer Department, etc	1
Assistants to the Chief of Engineers	7
On duty in the office of the Chief of Engineers	2
River and harbor work and the Board of Engineers	1
River and harbor work and fortification work	16
River and harbor work, fortification work, and lighthouse duty	6
River and harbor work, fortification work, the Board of Engineers, and chief engineer officer, military division	1
River and harbor work, fortification work, the Board of Engineers, and lighthouse duty	1
River and harbor work	18
River and harbor work, fortification work, chief engineer officer, military division, and lighthouse duty	1
River and harbor work and lighthouse duty	6
River and harbor work and chief engineer officer, military division	1
River and harbor work and Fort Riley military reservation	1
River and harbor work and monument at Fort Recovery	1
River and harbor work and Vicksburg Military Park	1
River and harbor work, fortification work, with engineer troops, Hawaiian Islands, lighthouse duty, and assistant chief engineer officer, military division	1
Fortification work and chief engineer officer, Philippines Division	1
Fortification work, Philippine Islands	2
On duty with and under the Panama Canal Commission	11
On duty with the General Staff Corps	1
On duty at the Army War College	1
On duty at the United States Military Academy	11
On duty at the Service Schools, Fort Leavenworth, Kans	5
On duty at the Army Field Engineer School, Fort Leavenworth, Kans	1
On duty connected with the Twelfth International Congress of Navigation	1
With the government of the District of Columbia	3
Preparing plans for defense of Panama Canal	1
Public Buildings and Grounds, District of Columbia	1
At Engineer School, Washington Barracks, D. C., and with troops stationed there	32
On duty with troops at Fort Leavenworth, Kans	19
On duty with troops at Vancouver Barracks, Wash	3
On duty with troops in the Hawaiian Islands	4
On duty with troops in the Philippine Islands	11
Removal of the battleship *Maine*	2
With the Board of Engineers	1
Military attaché, Tokyo, Japan	1
Improvement of the Yellowstone National Park	1
Superintendent of the State, War, and Navy Building	1
Road work in Alaska	1
Under instruction in engineer district	5
Changing station	1
On leave of absence	2
On graduating leave of absence	6
	194

The above table shows that out of a total of 194 officers only 58, or approximately 30 per cent, were on duty wholly under the control of the Chief of Engineers; 53, or 27 per cent, more were performing some duty under the control of the Chief of Engineers while at the same time performing other duties under various other branches of the Government; while 73, or 39 per cent of the entire corps were on duty entirely detached from the control and supervision of the Chief of Engineers; in addition 1 was changing station, 2 were on leave of absence, and 6 were on graduation leave from the United States Military Academy.

With regard to the character of the duties performed, 57 officers were engaged on nonmilitary duty exclusively, 93 on military duty exclusively, while 34 were performing both military and nonmilitary duty. The diversified character of the duties assigned to the Corps of Engineers is well shown by this table.

An increase in the Corps of Engineers was provided for by Congress in section 5 of the river and harbor act approved February 27, 1911.

Under the provisions of this act of Congress 12 original vacancies were immediately created, and 12 additional vacancies were created on February 27, 1912, so that the authorized strength of the Corps of Engineers is now 212 officers. Since the assignment to the Corps of Engineers of the cadets graduating in the fiscal year 1912 there remain 18 vacancies in the grade of second lieutenant, which, under the provisions of the law quoted above, may be filled from civil life.

ENGINEER TROOPS.

The increase in Engineer officers provided for by the act of February 27, 1911, is that considered necessary for properly carrying on the work now devolving upon the Corps of Engineers, and takes no account of a possible increase in the number of Engineer troops. In the annual reports of the Chief of Engineers for 1908, 1909, and 1910 it was pointed out that any further increase in the Engineer troops should be accompanied by a corresponding increase in officers, in order to avoid the necessity for withdrawing from construction work the necessary officers for duty with the additional battalions, which has heretofore so handicapped the civil work of the corps. It is understood that this subject is under consideration by the General Staff, and that this body will recommend in due time an appropriate organization of Engineer troops, with suitable provision for both officers and men and with greater numerical strength than at present, as is considered proper and necessary.

NONCOMMISSIONED OFFICERS OF ENGINEERS.

In the annual reports for 1908, 1909, 1910, and 1911 recommendation was made for the establishment of certain higher grades of noncommissioned officers in the Corps of Engineers, comparable to those in certain other branches of the service, and this recommendation is renewed. The extensive military surveys in this country and in the island possessions, the proper handling of explosives, photography and map reproduction, drafting, the supervision and direction of working parties, both of troops and of civilian labor, the thorough practical knowledge of field works, military bridges, ponton bridges,

demolitions, military mining, and road construction, all of which fall within the duties of Engineer troops, demand long and careful training, combined with technical skill in the mechanical trades, and presuppose a high grade of enlisted men. This grade of men is no longer attracted to the Engineer troops. The work of this branch of the service is arduous and pay and opportunities for advancement are no longer such as to attract the best men. Engineer troops are expected and required to perform all the usual post duties, to be well trained in infantry maneuvers and in rifle practice, to understand the handling of horses and mules, and in addition to be thoroughly trained in their own special technical duties. Men about to enlist are guided largely in their choice of a branch of the service by the relative opportunities of advancement offered in the several branches, as well as by the relation between the character of the work and the compensation received.

It is at present quite generally true that many of the most efficient engineer soldiers and those who could be developed into men of the highest worth will not reenlist for a second enlistment period. If the engineers are to continue to attract the grade of men needed to properly perform the duties of this branch, they must offer opportunities of advancement at least equal to those of the other technical branches of the service, such as the Coast Artillery and the Signal Corps. Under present conditions, not only do the better and more intelligent class of men hesitate to enlist in the engineers, but the engineers are subject to a steady drain of their best men through refusal to reenlist on discharge, through discharge by purchase, and through transfer to other branches of the service where easier service is rewarded by almost equal pay. It is believed that if the efficiency of the engineer troops is to be kept up to the high standard demanded and expected of them these conditions must be remedied by increasing the opportunities of promotion for good men and by the creation of additional higher grades as a reward for special excellence. As the technical duties of engineer troops require the frequent detachment of small parties, or of individuals, for special duties or for the supervision of working parties, the exact proportion between the number of privates, corporals, and sergeants, based upon the number of squads and sections in the company, is not applicable. Furthermore, the care of the ponton trains, tool wagons, mules, and horses of mounted sections requires wagoners, artificers, saddlers, blacksmiths, and farriers.

The number of cooks allowed to an engineer company should also be increased, as the number now authorized—two for a company of 164 men—is too small for the performance of their duties. Four cooks are regarded as necessary for an engineer company of 164 men, especially in view of the fact that detachments of considerable size are often separated from the company on special service requiring the services of a cook with each detachment, as well as at the headquarters of the company.

The designation of the present grade of "private, second class," should be changed to "private," as the description "second class" is distasteful to the men, and is unnecessary to distinguish this grade from that of "private, first class." This change would also emphasize more clearly the fact that appointment as private, first class, is a promotion in grade, and not merely an increase in pay.

THE BOARD OF ENGINEERS.

The regulations for the government of the Corps of Engineers provide for a board of engineers, consisting of not less than three officers designated by the Chief of Engineers, with the sanction of the Secretary of War. This board acts in an advisory capacity to the Chief of Engineers upon important questions of engineering. One of its principal duties is to plan or revise the projects for permanent fortifications of the United States.

The following changes have taken place in the personnel of the board since the date of the last annual report: Rear Admiral Richard Wainwright, United States Navy, contingent member, retired from active service.

As at present constituted the Board of Engineers is composed of Col. Wm. T. Rossell, Corps of Engineers; Col. W. M. Black, Corps of Engineers; Col. S. W. Roessler, Corps of Engineers; Lieut. Col. E. B. Babbitt, Ordnance Department; Capt. E. M. Adams, Corps of Engineers, recorder and disbursing officer.

In addition, division engineers in whose divisions there are fortifications are members of the Board of Engineers when matters pertaining to defensive works in their respective divisions are under consideration by the board.

During the fiscal year the board has reported upon various subjects connected with fortification work.

FORTIFICATIONS IN THE UNITED STATES.

The scheme of national defense upon which work was in progress between 1888 and 1906 was based primarily upon a report submitted January 16, 1886, by the "Board on Fortifications or Other Defenses," commonly designated the Endicott Board. On January 31, 1905, the President organized a board, with the Secretary of War, Hon. W. H. Taft, as president, to review the projects for the United States and for the insular possessions, to indicate the localities where defenses were most urgently needed, and to determine the character and general extent of the defenses, with their estimated cost. This board is known as the National Coast Defense Board. The board submitted its final report February 1, 1906.

Permanent seacoast defenses have been installed at the following localities in the United States:

1. Kennebec River, Me.
2. Portland, Me.
3. Portsmouth, N. H.
4. Boston, Mass.
5. New Bedford, Mass.
6. Narragansett Bay, R. I.
7. Eastern entrance to Long Island Sound.
8. New York, N. Y.
9. Delaware River.
10. Baltimore, Md.
11. Washington, D. C.
12. Hampton Roads, Va.
13. Cape Fear River, N. C.
14. Charleston, S. C.
15. Port Royal, S. C.
16. Savannah, Ga.
17. Key West, Fla.
18. Tampa Bay, Fla.
19. Pensacola, Fla.
20. Mobile, Ala.
21. New Orleans, La.
22. Galveston, Tex.
23. San Diego, Cal.
24. San Francisco, Cal.
25. Columbia River, Oreg. and Wash.
26. Puget Sound, Wash.

In accordance with the report of the board above mentioned additional defenses are to be constructed at some of these points and also

at the entrance to Chesapeake Bay and at Los Angeles, Cal., when funds have been provided by Congress.

While for present conditions the National Coast Defense Board scheme is, in general, sufficient, the defensive requirements of our seacoast may be subject to change to meet new requirements due to changes in military conditions and in commercial and naval vessels. This scheme carried an estimate amounting to $10,836,400 for emplacement construction (not including electric light or power or land for sites). Appropriations to date, since the submission of the report of the board, aggregate $305,064.

Appropriations for construction of gun and mortar batteries have been made as follows:

Act of—	
Aug. 18, 1890	$1,221,000.00
Feb. 24, 1891	750,000.00
July 23, 1892	500,000.00
Feb. 18, 1893	50,000.00
Aug. 1, 1894	500,000.00
Mar. 2, 1895	500,000.00
June 6, 1896	2,400,000.00
Mar. 3, 1897	3,841,333.00
Allotments from the appropriation for "National defense," act of Mar. 9, 1898	3,827,842.80
Act of—	
May, 7, 1898	$3,000,000.00
July 7, 1898	2,562,000.00
Mar. 3, 1899	1,000,000.00
May 25, 1900	2,000,000.00
Mar. 1, 1901	1,615,000.00
June 6, 1902	2,000,000.00
Mar. 3, 1903	2,236,425.00
Apr. 21, 1904	700,000.00
May 27, 1908	300,000.00
Mar. 3, 1909	5,064.00
Total	29,008,664.80

With a view to providing defenses now demanded by existing military, naval, and commercial conditions, an estimate of $100,000 is submitted.

Modernizing older emplacements.—No funds have been provided for this purpose since the fortification appropriation act of March 3, 1909.

Much remains to be done to place the older batteries in satisfactory condition for most efficient operation, including the altering of projectile hoists to meet present requirements, widening loading platforms, platform lighting, etc.

For carrying on the most urgently needed work under this head an estimate of $100,000 is submitted.

Appropriations for modernizing older emplacements have been made as follows:

Act of—	
Mar. 3, 1905	$450,000.00
June 25, 1906	150,000.00
Mar. 2, 1907	100,000.00
May 27, 1908 (new application of funds appropriated for pneumatic-dynamite batteries)	165,261.36
Mar 3, 1909	100,000.00
Total	965,261.36

Fire control at fortifications.—Such progress has been made during the fiscal year as funds assigned to the Engineer Department have permitted.

The fortification appropriation act approved June 6, 1912, provided the sum of $100,000 for this purpose; these funds are distributed by the Secretary of War among the Engineer and Ordnance Departments and the Signal Corps for expenditure. For the con-

tinuation of this work an estimate of $200,000 prepared by the Chief of Coast Artillery is submitted.

Prior to 1905 appropriations for this work were made under the title "Installation of range and position finders" (expended entirely by the Engineer Department), as follows:

Act of—	
July 7, 1898	$150,000
May 25, 1900	150,000
Mar. 1, 1901	150,000
June 6, 1902	325,000
Mar. 3, 1903	223,500
Apr. 21, 1904	225,000
Total	1,223,500

Later appropriations have been made, under the title "Fire Control at Fortifications," applicable to the work of the Engineer and Ordnance Departments and the Signal Corps. The amounts appropriated and the portions thereof assigned to the Engineer Department are as follows:

Act of—	Appropriated.	Assigned to Engineer Department.
Mar. 3, 1905	$1,000,000.00	$590,000.00
June 25, 1906	700,000.00	217,631.37
Mar. 2, 1907	966,000.00	432,784.81
May 27, 1908	270,256.00	129,456.00
Mar. 3, 1909	247,055.00	211,555.00
June 23, 1910	200,000.00	
Mar. 4, 1911	100,000.00	98,690.39
June 6, 1912	100,000.00	
Total	3,517,311.00	1,680,117.57

Electrical installations.—The National Coast Defense Board estimated that $5,216,031 would be required to furnish the necessary electrical equipment for the defenses of the United States in addition to the current required for searchlights.

Funds have been provided by Congress for this purpose as follows:

Act of—	
May 27, 1908	$348,888
Mar. 3, 1909	100,000
Mar. 4, 1911	50,000
Total	498,888

The funds provided in the act of March 4, 1911, were applied to the purchase and installation of a few generating sets where most needed.

For continuing the installation of this equipment at the defenses where they are considered to be most needed an estimate of $50,000 is submitted.

Searchlights.—The procurement and installation of searchlight equipment has been continued during the past fiscal year with the $50,000 appropriated by the act of March 4, 1911. The act of June 6, 1912, has provided $25,000 (by reappropriation) for this pur-

pose, and this amount will all be required for expenditure during the present year.

To carry on the work of installation an estimate of $250,000 is submitted.

Appropriations for searchlights have been made as follows:

Act of—	
Mar. 1, 1901 (New York Harbor)	$150,000
June 6, 1902	150,000
Mar. 3, 1903	150,000
Apr. 21, 1904	150,000
Mar. 3, 1905	200,000
June 25, 1906	125,000
Mar. 2, 1907	210,000
May 27, 1908	210,000
Mar. 3, 1909	210,000
June 23, 1910	50,000
Mar. 4, 1911	50,000
June 6, 1912 (reappropriated from balances of other funds)	25,000
Total	1,680,000

Sites for fortifications.—Beyond negotiations for a few small parcels of ground, required for appurtenances to fortifications, no operations under this appropriation have been possible, due to lack of funds.

With a view to beginning the construction of defenses for the entrance to Chesapeake Bay, an estimate of $150,000 is submitted to be applied to the acquisition of land at Cape Henry.

Appropriations for sites for fortifications have been made as follows:

Act of—		Act of—	
Aug. 18, 1890	$500,000	May 25, 1900	$200,000
Feb. 24, 1891	500,000	Mar. 1, 1901	200,000
July 23, 1892	500,000	June 6, 1902	200,000
Feb. 18, 1893	175,000	Mar. 3, 1903	200,000
Aug. 1, 1894	150,000	Apr. 21, 1904	100,000
June 6, 1896	500,000	May 27, 1908	121,048
Mar. 3, 1897	300,000	Mar. 3, 1909	250,000
May 7, 1898	300,000		
Mar. 3, 1899	300,000	Total	4,496,048

Preservation and repair of fortifications.—The modern defenses now existing represent an expenditure of approximately $29,000,000 for battery construction alone. For the preservation and repair of these works and their accessories during the present fiscal year there was appropriated the sum of $300,000, barely more than 1 per cent of the cost of the batteries. These extensive works contain much costly machinery and ordnance material, and must be kept properly painted and repaired to be effective when needed. The $300,000 provided in the act of June 6, 1912, will scarcely be sufficient to keep the essential features of the fortifications in satisfactory condition for the fiscal year. Much desirable and necessary work is now awaiting future appropriations.

An estimate of $300,000 for preservation and repair is submitted, and it is strongly recommended (in the interest of economy and efficient service) that this amount be appropriated.

Appropriations for preservation and repair of fortifications have been made as follows:

Act of—	
Sept. 22, 1888	$100,000
Mar. 2, 1889	100,000
Aug. 18, 1890	80,000
Feb. 24, 1891	80,000
July 23, 1892	60,000
Feb. 18, 1893	45,000
Aug. 1, 1894	45,000
Mar. 2, 1895	45,000
June 6, 1896	50,000
Mar. 3, 1897	100,000
May 7, 1898	100,000
Mar. 3, 1899	100,000
May 25, 1900	100,000
Mar. 1, 1901	100,000
Feb. 14, 1902	3,000
June 6, 1902	$300,000
Mar. 3, 1903	300,000
Apr. 21, 1904	300,000
Mar. 3, 1905	300,000
June 25, 1906	200,000
Mar. 2, 1907	200,000
May 27, 1908	225,000
Mar. 3, 1909	225,000
June 23, 1910	300,000
Mar. 4, 1911	300,000
June 6, 1912 ($125,000 reappropriated from balances of other funds)	300,000
Total	4,058,000

Plans for fortifications.—Funds appropriated for this purpose are expended in the preparation or revision of projects and plans of works for the permanent fortification of the United States.

This work is one of the principal duties of the Board of Engineers. Beginning with the act of March 2, 1889, an appropriation of $5,000 for the work has been carried in each fortification appropriation act, and an estimate of this amount is submitted this year.

Supplies for seacoast defenses.—Owing to the large number of electric installations supplying power and light in seacoast batteries, funds have been appropriated annually for tools and supplies for their maintenance and operation. This appropriation is designed to enable the Engineer Department to comply with the regulations of the War Department for the supply and service of the batteries.

The act of June 6, 1912, appropriated $45,000 for this purpose and extended the applicability of the appropriation to include searchlight supplies.

As the earlier electric plants become worn with use, and as additional plants and electrical apparatus are installed from time to time, the demands upon the funds for the purchase of these supplies increase.

The sum of $45,000 is estimated as necessary for the procurement of the regular electrical supplies for the next fiscal year, especially in view of the numerous installations being provided for battery lighting and power and for searchlight service.

Appropriations for supplies for seacoast defenses have been made as follows:

Act of—	
May 25, 1900	$25,000.00
Mar. 1, 1901	25,000.00
June 6, 1902	25,000.00
Mar. 3, 1903	35,000.00
Apr. 21, 1904	35,000.00
Mar. 3, 1905	40,000.00
June 25, 1906	30,000.00
Mar. 2, 1907	40,000.00
May 27, 1908	$44,500.00
Mar. 3, 1909	40,000.00
June 23, 1910	45,000.00
Mar. 4, 1911	45,000.00
June 6, 1912	45,000.00
Total	474,500.00

Reserve lights.—A satisfactory form of reserve electric lantern has been produced as the result of exhaustive tests. To supply these lanterns in sufficient quantities to all batteries in service, an estimate of $19,500 was originally submitted. Of this amount, the sum of $10,000

was appropriated in the act of March 3, 1909; under this appropriation lights have been purchased and issued to the fortifications so far as the funds available would permit, leaving $9,500 yet to be provided by Congress.

Sea walls and embankments.—The very large number of seacoast reservations renders necessary a considerable expenditure of funds to prevent the washing away of valuable land by the ordinary action of the waves and to repair damages done by occasional violent storms.

The fortification appropriation act of June 6, 1912, provided $25,000 for this purpose by reappropriation. To provide for maintenance and necessary extensions of existing sea walls and such new sea walls as may be necessary, an estimate of $30,000 is submitted.

Appropriations for sea walls and embankments, exclusive of those for particular localities, have been made as follows:

Act of—		Act of—	
Sept. 22, 1888	$117,000	Mar. 3, 1905	$19,400
June 6, 1896	17,975	June 25, 1906	50,000
Mar. 3, 1897	33,000	Mar. 2, 1907	25,000
May 7, 1898	55,000	May 27, 1908	50,000
Mar. 3, 1899	2,500	Mar. 3, 1909	50,000
May 25, 1900	50,000	June 6, 1912 (reappropriated from balances of other funds)	25,000
Mar. 1, 1901	100,000		
June 6, 1902	100,000		
Mar. 3, 1903	89,575		
Apr. 21, 1904	99,000	Total	883,450

Repair and protection of defenses of Charleston, Pensacola, Mobile, and New Orleans.—For repairs and sea walls at these localities, rendered necessary by storms the following estimates were submitted to Congress in 1906:

Charleston, S. C., for the construction of the sea wall necessary for the protection of Fort Moultrie	$225,600
Pensacola, Fla., for building sea walls for the protection of the sites of the fortifications and of the necessary post buildings at Forts Pickens and McRee	907,100
Pensacola, Fla., for repair and restoration of batteries and other structures appurtenant to the defenses of Pensacola, and for retaining walls to protect the batteries from floods	109,355
Mobile, Ala., for repair and restoration of batteries and other structures appurtenant to the defenses of Mobile, and for rebuilding sea walls and groins for protection of the sites of the fortifications of the garrison posts	1,089,500
New Orleans, La., for rebuilding and strengthening the levees for protection of the site of the defenses and the garrison post at Fort St. Philip	139,800

In 1907, 1908, and 1909 appropriations were made covering the estimates for Charleston, Mobile, and Pensacola. The work at Charleston has been completed. The work at Pensacola and Mobile is progressing satisfactorily toward completion.

In 1907 the sum of $100,000 was appropriated for the levees at Fort St. Philip. This amount was insufficient to protect the entire reservation and a portion thereof was abandoned to overflow, the most important portion being inclosed by levees. For the adequate protection against high water of this portion of the reservation, however, it is necessary that a portion of the levee be raised and strengthened, and for this purpose it is estimated that $16,000 will be required. An estimate of this amount is submitted.

Appropriations for this work have been made as follows:

Act of Mar. 2, 1907:	
Sea wall, Fort Moultrie, S. C.	$100,000
Repair and protection of defenses of New Orleans, La.	100,000
Repair and protection of defenses of Pensacola, Fla. (for sea wall)	400,000
Repair and protection of defenses of Pensacola, Fla. (for batteries, etc.)	50,000
Repair and protection of defenses of Mobile, Ala.	500,000
Act of May 27, 1908:	
Sea wall, Fort Moultrie, S. C.	125,600
Repair and protection of defenses of Pensacola, Fla. (for batteries, etc.)	59,355
Repair and protection of defenses of Mobile, Ala.	589,500
Act of Mar. 3, 1909, repair and protection of defenses of Pensacola, Fla. (for sea walls)	507,100

Under the provisions of the fortification appropriation act of June 6, 1912, balances of these appropriations have been applied to other objects of expenditure, as follows:

Sea wall, Fort Moultrie, S. C.	$8,992
Repair and protection of defenses of Pensacola, Fla.:	
For batteries, etc.	1,008
For sea walls	40,000
Repair and protection of defenses of Mobile, Ala.	96,000
	146,000

Sea walls, defenses of Galveston, Tex.—The defensive works at Galveston are unavoidably in most exposed positions, and the level of the lands surrounding the batteries was greatly lowered by the storm of September 8, 1900. Work of reconstruction and repair of the Galveston defenses is now completed under the appropriation of $992,000 contained in the fortification act approved March 1, 1901. With the funds so provided, and in accordance with the plans before Congress when that appropriation was made, each individual battery has been made secure against any similar storms which are likely to occur in the future.

For building a sea wall and filling up the reservation at Fort Crockett to a height above storm tides the sums of $591,046.25 and $158,953.75 were appropriated in the sundry civil appropriation acts of April 28, 1904, and June 30, 1906, aggregating $750,000. The retaining wall in the rear of the reservation has been undermined by washouts, permitting portions of the fill to escape. With a view to remedying this condition, it is contemplated to provide for an extension upon private land of the fill at the adopted grade of 2 per cent until it intersects the natural surface of the ground (the consent of the owners being first obtained); the estimated cost of this work is $88,000.

For a sea wall and fill at Fort Travis the sum of $440,000 was provided in the fortification appropriation act approved March 3, 1909. The work under this appropriation is in active progress and approaching completion. Under the provisions of the fortification appropriation act of June 6, 1912, a balance of $65,000 pertaining to this appropriation has been applied to other objects of expenditure.

Similar protection is required at Fort San Jacinto if this fort is to be garrisoned. There are, however, certain claims to portions of this reservation adverse to the title of the United States. Until all clouds

upon the title of the United States are removed no money should be expended on this reservation.

Repair and protection of the defenses of Key West, Fla.—On October 14 and again on October 17, 1910, severe hurricanes were experienced at Key West, Fla., the wind velocities reaching 60 and 105 miles per hour, respectively. The storms occasioned considerable damage to the defensive works at Key West, demolishing a number of fire-control structures, storehouses, etc., washing away the sand cover of certain batteries, and entirely destroying the approach to the wharf being constructed for the torpedo service and for landing vessels with supplies, etc., for the general use of the garrison. The repairs of these damages were provided for so far as practicable from funds appropriated for general maintenance work, but certain items of work, including principally the restoration of the wharf, required a special appropriation. The fortification appropriation act of June 6, 1912, provided $36,000 for this purpose, and the work of restoration is now in progress.

Preservation and repair of torpedo structures.—A large number of new torpedo-defense structures have been completed and a number, in addition, are approaching completion.

Situated as they are at exposed locations on the Atlantic, Gulf, and Pacific coasts, the requirements for the maintenance of these structures are considerable. The act of June 6, 1912, provided $20,000 for this purpose, and extended the applicability of the appropriation to include the maintenance of channels for access to torpedo wharves. This sum is being applied to such minor repairs and maintenance as are found from time to time to be most urgently necessary. In view of the very large number of these structures and the necessity for frequent repairing and minor repairs to prevent marked deterioration in the buildings, the sum of $20,000 has not been sufficient during the past year for all necessary work, and an estimate of $30,000 is submitted this year.

Appropriations for preservation and repair of torpedo structures have been made as follows:

Act of—		Act of—	
June 25, 1906	$10,000	June 23, 1910	$20,000
Mar. 2, 1907	10,000	Mar. 4, 1911	20,000
May 27, 1908	15,000	June 6, 1912	20,000
Mar. 3, 1909	20,000	Total	115,000

Submarine mines.—Prior to the act of June 6, 1902, all work in connection with the submarine-mine defense was under the Engineer Department. This act assigned to the Artillery the purchase of torpedo material proper, leaving to the Engineer Department the erection of casemates, galleries, storehouses, and other necessary structures.

The fortification appropriation act approved March 4, 1911, provided $50,000 for this purpose, and work under this appropriation is now approaching completion. To provide additional structures which are necessary under existing projects, an estimate of $35,000 is submitted.

Appropriations for work under the Engineer Department have been made since July 1, 1888, as follows:

Date of act.	Appropriated.	Covered into surplus fund or repaid to national-defense fund.	Net appropriation.
Sept. 22, 1888: Materials, structures, experiments, instruction, and movable torpedoes	$200,000.00		$200,000.00
Mar. 2, 1889:			
Mines and appliances	250,000.00		250,000.00
Structures	250,000.00		250,000.00
Experiments and instruction	30,000.00		30,000.00
Movable torpedoes	50,000.00	$24,775.00	25,225.00
Shed, San Francisco	22,000.00	216.77	21,783.23
Aug. 18, 1890:			
Mines and appliances	100,000.00		100,000.00
Structures	100,000.00		100,000.00
Experiments and instruction	30,000.00	100.00	29,900.00
Feb. 24, 1891:			
Mines and appliances	50,000.00		50,000.00
Structures	50,000.00		50,000.00
Structures, Goat Island, Cal	16,000.00	4,616.68	11,383.32
Mar. 2, 1895:			
Mines and appliances	20,000.00		20,000.00
Structures	20,000.00		20,000.00
June 6, 1896: Materials and structures	100,000.00		100,000.00
Mar. 3, 1897: Materials and structures	150,000.00		150,000.00
Mar. 9, 1898 (national defense): presidential allotments:			
Mar. 17, 1898—Materials, including searchlights	250,000.00		250,000.00
Mar. 31, 1898—Portion of allotment for torpedo service	8,725.00		8,725.00
Apr. 2, 1898—Torpedo operations	1,150,000.00	120,323.70	1,029,676.30
Apr. 21, 1898—Planting torpedoes	150,000.00	48,290.45	101,709.55
Jan. 21, 1899—Torpedo defense (actually expended from consolidated allotment)	456.71		456.71
May 4, 1898:			
Material	50,000.00	1,194.39	48,805.61
Planting mines	300,000.00	68,097.84	231,902.16
May 7, 1898: Materials and structures	150,000.00		150,000.00
July 7, 1898:			
Maintenance of mine fields	736,000.00	736,000.00	
Additional material, operating searchlights and electric plants	650,000.00	192,616.49	457,383.51
Mar. 3, 1899: Material and structures	50,000.00		50,000.00
May 25, 1900: Material and structures	50,000.00		50,000.00
Mar. 1, 1901: Material and structures	50,000.00		50,000.00
Feb. 14, 1902: Deficiency	2.68		2.68
June 6, 1902: Structures	33,000.00		33,000.00
July 1, 1902: Deficiency	4.38		4.38
Mar. 3, 1903: Structures	50,000.00		50,000.00
Apr. 21, 1904: Structures	87,000.00		87,000.00
Mar. 3, 1905: Structures	400,000.00		400,000.00
June 25, 1906: Structures	175,000.00		175,000.00
Mar. 2, 1907: Structures	175,000.00		175,000.00
May 27, 1908: Structures	175,000.00		175,000.00
Mar. 3, 1909: Structures	100,000.00		100,000.00
Mar. 4, 1911: Structures	50,000.00		50,000.00
	6,278,188.77	1,196,231.32	5,081,957.45

Miscellaneous appropriations.—In addition to the appropriations hereinbefore reported, the following special appropriations have been made since July 1, 1888, for work in connection with seacoast fortifications in the United States under the Engineer Department:

Sept. 22, 1888 (Army appropriation act): Repairs to wharf and sea wall at Willets Point	$2,500
Aug. 18, 1890:	
Preservation and repair of Fort Marion, Fla., and sea wall	15,000
Sea wall, Governors Island, New York Harbor	50,000
Feb. 24, 1901:	
Protection of shore at Fort Monroe, Va	27,000
Artesian well at Fort Monroe ($5,908.95 returned to surplus fund)	6,000
Aug. 1, 1894:	
Sea wall, north shore at Sandy Hook, N. J	7,500
Sewerage system at Fort Monroe, Va. ($10,472.69 returned to surplus fund)	37,500

Mar. 3, 1897: Riprap wall, eastern beach at Sandy Hook, N. J..... $75,000
July 7, 1898: Pneumatic dynamite gun batteries ($22,857.18 reappropriated for "Modernizing older emplacements")..... 150,000
May 25, 1900:
Sea wall and fill, Fort Caswell, N. C..... 150,000
Pneumatic dynamite gun batteries ($142,404.18 reappropriated for "Modernizing older emplacements")..... 180,000
June 6, 1902: Riprap stone wall, eastern beach at Sandy Hook, N. J..... 75,000
Mar. 3, 1905: Sea wall, north beach, at Sandy Hook, N. J..... 40,000

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FORTIFICATIONS IN INSULAR POSSESSIONS.

Batteries.—The first appropriation for this purpose was contained in the fortification act approved April 21, 1904, and additional appropriations have been made in each of the succeeding years, the aggregate amount appropriated to date being $8,140,200 (including $250,000, the expenditure of which was assigned to the Chief of Ordnance). With these appropriations batteries have been constructed at Guantanamo Bay, Cuba, and construction work is now in progress at Honolulu and Pearl Harbor, Hawaii, and Manila and Subic Bays, Philippine Islands.

Estimates for this work, amounting to $70,000 for the Hawaiian Islands and $1,000,000 for the Philippine Islands, are submitted, to permit the continuation of work at these localities.

Appropriations for this work have been made as follows:

Act of—	Generally applicable.	Hawaiian Islands.	Philippine Islands.
Apr. 21, 1904	$700,000	.....	.....
Mar. 3, 1905	700,000	.....	.....
June 25, 1906	.....	$260,000	.....
Mar. 2, 1907	.....	200,000	$500,000
May 27, 1908	.....	400,000	954,000
Mar. 3, 1909	.....	337,200	[1] 1,000,000
June 23, 1910	.....	.....	800,000
Mar. 4, 1911	.....	150,000	1,169,000
June 6, 1912	.....	170,000	800,000
Total	1,400,000	1,517,200	[1] 5,223,000

[1] Including $250,000, the expenditure of which was assigned to the Chief of Ordnance.

Electrical installations.—The National Coast Defense Board estimated that $788,713 would be required to furnish the necessary electrical equipment for the defenses of the insular possessions, in addition to the current required for searchlights.

Toward the installation of this equipment the sum of $455,254 has thus far been provided by Congress—$34,469 for the Hawaiian Islands and $420,785 for the Philippine Islands. With the funds available electrical equipment is now being procured and installed. For the continuation of this work an estimate is submitted of $34,469 for the Hawaiian Islands; this sum is the unappropriated balance of the total National Coast Defense Board estimate. So far as can be determined in the present status of the work on the defenses, the amount estimated for the Hawaiian Islands will be sufficient.

Appropriations for this work have been made as follows:

Act of—	Hawaiian Islands.	Philippine Islands.
May 27, 1908	$20,000	$115,000
Mar. 3, 1909	14,469	88,823
June 23, 1910		45,000
Mar. 4, 1911		171,962
Total	34,469	420,785

Searchlights.—The funds heretofore appropriated for this purpose have been applied to the completion of the adopted projects so far as their amounts permitted. To complete the installation of the searchlights covered by existing projects in the Hawaiian Islands and the Philippine Islands, estimates of $10,800 and $20,600, respectively, are submitted. So far as data are at present available, the amounts of these estimates will be sufficient for the purpose for which submitted.

Appropriations for this work have been made, as follows:

Act of—	Generally applicable.	Hawaiian Islands.	Philippine Islands.
Mar. 2, 1907	$30,000		
May 27, 1908		$47,500	$180,000
Mar. 3, 1909		66,000	
June 23, 1910			139,000
Mar. 4, 1911		40,100	
Total	30,000	153,600	319,000

Procurement of sites.—For the procurement of land or rights pertaining thereto in the Philippine Islands the sum of $5,000 was provided by the fortification act of May 27, 1908, and the additional sum of $12,000 by the act of March 3, 1909. The acquisition by condemnation of the land required has been completed.

The acquisition of additional land in the Hawaiian Islands with the unexpended balance of the funds provided therefor in the fortification appropriation act of June 25, 1906, is in progress.

Appropriations for this work have been as follows:

Act of—	Hawaiian Islands.	Philippine Islands.
Apr. 21, 1904	$200,000	
June 25, 1906	150,000	
May 27, 1908		$5,000
Mar. 3, 1909		12,000
Total	350,000	17,000

Preservation and repair of fortifications.—A number of the batteries authorized by Congress for the insular possessions have been completed and are being operated by the troops. Repairs, painting, etc., are from time to time necessary. The approaching completion of work at certain localities and the exhaustion of construction funds

render provision for such work necessary in the future. Estimates are accordingly submitted of $1,500 and $14,000 for this purpose for the defensive work in the Hawaiian Islands and the Philippine Islands, respectively. The $8,000 appropriated for this purpose in the Philippine Islands and the $500 in the Hawaiian Islands, by the act of June 6, 1912, will be applied, so far as the funds are available, to the most necessary work required during the fiscal year.

Appropriations for this work have been made, as follows:

Act of—	Hawaiian Islands.	Philippine Islands.
June 23, 1910		$7,000
Mar. 4, 1911		7,000
June 6, 1912	$500	8,000
Total	500	22,000

Preservation and repair of torpedo-defense structures.—In order to provide for the maintenance in proper condition of the numerous structures already erected in connection with torpedo defense, estimates of $500 and $1,000, respectively, have been submitted for the Hawaiian Islands and the Philippine Islands. The $500 provided for this purpose in the act of June 6, 1912, will be applied, so far as it is sufficient for the purpose, to the care of the existing structures in the Philippine Islands. This act extended the applicability of this appropriation to include the maintenance of channels for access to torpedo wharves.

Appropriations for this work have been made, as follows:

Act of—

June 23, 1910 (Philippine Islands)	$1,000
Mar. 4, 1911 (Philippine Islands)	1,000
June 6, 1912 (Philippine Islands)	500

Supplies for seacoast defenses.—Under appropriations heretofore made by Congress a number of electric plants have been installed in the defensive works in the Hawaiian and Philippine Islands, and in order that the necessary supplies and materials may be furnished for their operation and maintenance, as for similar plants in this country, estimates of $1,000 and $5,000, respectively, have been submitted. For work of this character in the Hawaiian and Philippine Islands $750 and $2,500, respectively, were provided by the act of June 6, 1912, with which the supplies most urgently required will be procured. This act also extended the applicability of this appropriation to include searchlight supplies.

Appropriations for this work have been made, as follows:

Act of—	Hawaiian Islands.	Philippine Islands.
June 23, 1910		
Mar. 4, 1911		$2,500
June 6, 1912	$1,000	2,500
	750	2,500
Total	1,750	7,500

Submarine mines.—Work in the insular possessions for which funds are available is rapidly approaching completion. For the con-

struction of additional defenses of this character required in the Philippine Islands an estimate of $67,000 is submitted.

Appropriations for this work have been made, as follows:

Act of—	Generally applicable.	Philippine Islands.	Hawaiian Islands.
June 8, 1898 (for Manila Harbor)		$150,000	
Mar. 2, 1907	$200,000		
May 27, 1908			$129,000

Land defenses.—For the construction of works of defense against landing parties in the Philippine Islands the sum of $180,000 was appropriated by the fortification appropriation act approved March 4, 1911. Work under this appropriation is in active progress and will shortly be completed.

Fire control.—No funds for this purpose were provided by the fortification act of June 6, 1912, and no estimate for additional funds is submitted this year.

Appropriations for this work have been made as follows:

Act of—	Appropriated.	Assigned to Engineer Department.
Mar. 2, 1907	$100,000	$75,000
May 27, 1908	243,000	75,000
Mar. 3, 1909	250,000	222,427
June 23, 1910	200,000	13,150
	793,000	385,577

* * * * * * *

FORTIFICATIONS, ISTHMIAN CANAL.

The construction of these works is under the Isthmian Canal Commission, but plans for the various defensive works are being prepared by the Chief of Engineers, and substantial progress in their preparation has been made.

MILITARY STRUCTURES, PHILIPPINE ISLANDS.

The construction of a pumping plant, electric power plant, and certain Army storehouses for military purposes in the Philippine Islands has been assigned to the Engineer Department and funds from various appropriations applied thereto. These funds are insufficient for the completion of the work. It is now estimated that the additional sum of $170,000 will be required for this purpose, and an estimate of this amount is submitted.

ENGINEER DEPOTS.

WASHINGTON BARRACKS.

This depot is the repository for part of the military bridge equipage of the Army; for miscellaneous military engineering tools, apparatus, supplies, and materials of all kinds; and for astronomical,

surveying, drafting, and reconnoissance instruments and supplies used by the Army and by officers of the Corps of Engineers on public works, both military and civil. It purchases and issues military engineering tools and supplies and serves particularly as an exchange for engineer instruments of all kinds, receiving them from the Army or public works, caring for them while in store, making the necessary repairs, reissuing them when required, and, so far as appropriations will permit, making purchases of such items as can not be supplied from store.

Numerous shipments have been made during the year. A large number of instruments have been repaired in the instrument repair shop. All new instruments were examined and tested there.

A new building for depot shops and trade schools is urgently needed, the estimated cost being $22,000. This work is included in the estimates for buildings for the engineer post and school at Washington Barracks.

Ponton shed No. 2, 36 feet by 162 feet, and two stories in height, with elevator and overhead trolley system for second floor, was built and completed during the year at a cost of $14,784. An additional shed is, however, needed to properly care for the ponton equipment on hand and under contract, and an estimate of $15,000 therefor is included in the estimate for "Engineer equipment of troops" for the fiscal year ending June 30, 1914.

FORT LEAVENWORTH.

This depot is the repository for part of the military bridge equipage of the Army, as well as tools, stores, and miscellaneous supplies. The general work of the office and storehouse comprised the care of property on hand, the purchase of supplies, the repair of instruments, issues to the battalion of Engineers there stationed, and the keeping of the depot accounts and records.

Work in the shops during the year has included the fabrication and repair of all articles of the ponton equipage except chess and ponton carriages. This work was interrupted in March, 1911, by the departure of the Engineer battalion for duty with the maneuver division in Texas, but was resumed in October, 1911, upon the return of the troops.

Among the needs of this depot are the installation of electric lights in the storehouse and the construction of an additional ponton shed.

VANCOUVER BARRACKS.

This depot is the repository for part of the military bridge equipage of the Army, as well as tools, stores, and miscellaneous supplies. Work during the year has included the fabrication and repair of ponton equipage excepting the fabrication of wagons therefor, the purchase and issue of materials, tools, and supplies to Engineer troops, and some minor repairs to instruments.

HONOLULU.

This depot assembles and issues property and materials for the military operations in the Hawaiian Islands, cares for property in store, makes such minor repairs to instruments as can be made locally,

and obtains and issues such Engineer supplies as are required by the Engineer troops stationed at Honolulu. Operations during the year have been confined to these activities.

MANILA.

This depot is the repository of two divisions of the advance guard ponton equipage, and for miscellaneous tools, property, and supplies required for issue and for reserve equipment in the Philippines Division. The depot also makes minor repairs to instruments used in the military surveys in the Philippines Division.

The personnel at the depot was, on June 30, 1912, made up as follows:

Civilians: One storekeeper, American; 1 machinist, native; 2 carpenters, native; 5 laborers, native.

Enlisted (all from Third Battalion of Engineers): One battalion quartermaster sergeant, 1 corporal, and 12 privates.

These men perform all necessary office work; make and handle shipments; prevent as far as possible destruction due to rust, dry rot, white ants, and dampness, and make repairs.

The battalion quartermaster sergeant was detailed on work at the depot on February 20, 1912; two American clerks were discharged during the last quarter. Otherwise the numbers on the above list are about the average of those employed and detailed during the year.

Prior to the arrival of the Third Battalion of Engineers the enlisted detail was from Company H, Second Battalion of Engineers.

ENGINEER DEPOTS, 1912.

Incidentals.

Amount appropriated in the Army appropriation act of Mar. 3, 1911	$20,000.00
June 30, 1912, amount expended during fiscal year	15,820.94
July 1, 1912, balance unexpended	4,179.06
July 1, 1912, outstanding liabilities	4,165.53
Balance to revert to Treasury	13.53

Instruments.

Amount appropriated in the Army appropriation act of Mar. 3, 1911	$10,000.00
Collection on account of damages to instruments	40.21
Total available	10,040.21
June 30, 1912, amount expended during fiscal year	9,375.58
July 1, 1912, balance unexpended	664.63
Outstanding liabilities	614.63
Balance to revert to Treasury	50.00

ESTIMATES OF APPROPRIATIONS REQUIRED FOR THE ENGINEER DEPOTS FOR 1913–14.

For incidentals	$20,000.00
For instruments	10,000.00
Total	30,000.00

ENGINEER EQUIPMENT OF TROOPS.

With funds appropriated under this head engineering supplies were obtained for the various military divisions and departments in the United States and insular possessions, and for engineer troops.

At Washington Barracks issues of new instruments and repairs to old under the provisions of existing orders have been numerous during the year. Issues under General Orders, No. 221, War Department, 1907, have been suspended until further notice, under instructions from the War Department, and issues under General Orders, No. 73, War Department, 1907, are now authorized only so far as possible from supplies in hand. The question as to what reconnaissance and other engineer equipment is to be supplied to the Army at large is now under consideration by the War Department, and pending decision thereon it has not been possible to accumulate any considerable reserve supply of such items.

Although the equipment of engineer companies is also undergoing revision, a considerable quantity of reserve supplies of items not likely to be changed has been purchased.

A number of requisitions, amounting in all to approximately $10,000, were received and filled for the Organized Militia, reimbursement for which is made by Treasury settlement.

The purchase and fabrication of ponton equipage has been continued during the year, and a new ponton shed was constructed at Washington Barracks with funds provided by the appropriation.

ENGINEER EQUIPMENT OF TROOPS, 1912.

Engineer equipment.

Amount appropriated in the Army appropriation act of Mar. 3, 1911	$75,000.00
Collections on account of lost property	530.25
Sales of serviceable property	29.50
Total available	75,559.75
June 30, 1912, amount expended during fiscal year	46,217.21
July 1, 1912, balance unexpended	29,342.54
July 1, 1912, outstanding liabilities	28,537.75
Balance to revert to Treasury	804.79

Ponton shed.

Amount appropriated in the Army appropriation act of Mar. 3, 1911	$15,000.00
June 30, 1912, amount expended during fiscal year	14,798.68
July 1, 1912, balance unexpended	201.32
July 1, 1912, outstanding liabilities	187.01
Balance to revert to Treasury	14.31

ESTIMATE OF APPROPRIATIONS REQUIRED FOR THE ENGINEER EQUIPMENT OF TROOPS FOR 1913–14.

For ponton material, tools, instruments, equipment, and supplies required for use in the engineer equipment of troops, including the purchase and preparation of engineer manuals	$50,000.00
For construction of ponton shed at Washington Barracks, D. C., for shelter of new ponton and bridge material	15,000.00
Total	65,000.00

EQUIPMENT OF OFFICERS' SCHOOLS, MILITARY POSTS.

For the purchase of instruments for issue to officers' schools at military posts the sum of $3,000 was assigned from the appropriation for "Equipment of officers' schools, military posts, 1912," by the Secretary of War. This amount has been applied to the purchase of instruments for issue from the engineer depot at Washington Barracks. For similar purchases during the current fiscal year the sum of $1,500 has been assigned to the Engineer Department.

July 13, 1911, assigned to Engineer Department, act of March 3, 1911	$3,000.00
June 30, 1912, amount expended during fiscal year	2,422.51
July 1, 1912, balance unexpended	577.49
July 1, 1912, outstanding liabilities	577.49

CIVILIAN ASSISTANTS TO ENGINEER OFFICERS.

By act of Congress approved March 3, 1911, the sum of $42,000 was appropriated for civilian assistants to engineer officers serving on the staffs of division, corps, and department commanders to enable them to secure the services of surveyors, survey parties, draftsmen, photographers, master laborers, and clerks during the fiscal year 1912. These funds have been applied to the purpose for which appropriated.

The Army appropriation act approved August 24, 1912, contained an item of $40,000 for this purpose for the fiscal year 1913. The reorganization of the military establishment into territorial divisions has, by permitting a consolidation of offices, resulted in a moderate reduction in the number of civilian assistants required by the chief engineer officers, and it is anticipated that the funds appropriated for the current year will be sufficient for its requirements. An estimate of $40,000 for the fiscal year 1914 is submitted.

Amount appropriated by Army appropriation act approved Mar. 3, 1911	$42,000.00
June 30, 1912, amount expended during fiscal year	38,540.03
July 1, 1912, balance unexpended	3,459.97
July 1, 1912, outstanding liabilities	864.33
Balance to revert to Treasury	2,595.64

CONTINGENCIES, ENGINEER DEPARTMENT, PHILIPPINE ISLANDS.

In the prosecution of work of great importance in the Philippine Islands in remote and almost inaccessible localities the operations of the Engineer Department require funds of wide applicability and limited restrictions as to expenditure. Owing to the circumstances under which the work must be performed an appropriation of this character has been found essential to its satisfactory prosecution. Appropriations of $5,000 each for this purpose have been made for the fiscal years 1911, 1912, and 1913, and an estimate of the same amount is submitted for the fiscal year 1914.

Amount appropriated by Army appropriation act approved Mar. 3, 1911	$5,000.00
June 30, 1912, amount expended during fiscal year	3,109.14
July 1, 1912, balance unexpended	1,890.86
July 1, 1912, outstanding liabilities	1,877.49
Balance to revert to Treasury	13.37

MAPS, WAR DEPARTMENT.

With the $5,000 appropriated for this purpose for the fiscal year ending June 30, 1912, a number of miscellaneous military maps were printed.

These funds are also utilized in the publication of accurate maps of our fortified harbors, which, under existing regulations, are required for the use of the Coast Artillery, and a number of these maps were printed during the year. A portion of the appropriation has also been applied to the procurement of lithographic equipment needed for the publication of these harbor charts.

In view of the urgent necessity of printing certain important military maps now being prepared in addition to the prosecution of the work ordinarily accomplished under this appropriation, the estimate submitted for the fiscal year ending June 30, 1913, was increased to $10,000. Only $5,000 was, however, provided for this purpose. To permit the prompt publication of these maps, in addition to the work ordinarily accomplished under this appropriation, an estimate of $10,000 is submitted.

Amount appropriated by sundry civil act approved Mar. 4, 1911	$5,000.00
Collections of account of lost property	3.40
Total available	5,003.40
June 30, 1912, amount expended during fiscal year	4,746.03
June 30, 1912, balance unexpended	257.37
June 30, 1912, outstanding liabilities	253.97
Balance to revert to Treasury	3.40

BUILDINGS, ENGINEER POST AND SCHOOL, WASHINGTON BARRACKS, D. C.

The creation of the engineer post and school at Washington Barracks was authorized by an act of Congress approved June 30, 1902, and the work has been carried on in accordance with a general layout approved by the Secretary of War December 22, 1904, drawing of which was published in Annual Report of the Chief of Engineers for 1906.

A detailed history of the work is given in the Annual Reports of the Chief of Engineers from 1902 to 1906.

The buildings heretofore completed have been for post purposes almost exclusively, and the present plan provides for additional buildings for school and post purposes, as follows:

1. Group of buildings to include engineer school and administration buildings and power house and trade-school building:		
Engineer school and administration building	$275,000	
Power house	27,500	
Trade-school building	22,000	
		$324,500
2. Completion of west barracks		40,000
3. Bachelor officers' quarters		70,000
4. Six double sets noncommissioned officers' quarters		66,000
5. Dispensary and quarters for detachment		25,000
6. Stable		20,000
7. Store sheds for wood, coal, and lumber		2,000
8. Chaplain's quarters		20,000
9. Commissary officers' quarters		15,000
10. Observatory		3,000
11. Roads, walks, sidewalks, sewers, water and gas supply, electric distribution, gutters, etc		25,000
		610,500

The river and harbor appropriation act approved July 25, 1912, provided $100,000 for the construction at the engineer school of a building with library accommodations and other facilities for the instruction of officers of the Corps of Engineers in duties pertaining to the improvement of rivers and harbors. This sum will be applied to the construction of so much of item 1 above as is properly applicable to the work of the school exclusively and as the funds provided will permit.

This appropriation reduces the amount yet required under item 1 to $224,500, and reduces the total amount required to $510,500.

The work of the engineer school is also of the greatest importance in fitting the younger officers of the corps for the important military duties which, owing to the present shortage of officers, devolve upon them at an early period in their careers. The $100,000 provided by the act of July 25, 1912, while covering so much of the total cost as belongs to river and harbor work, will not be sufficient to cover the portion of item 1 required for school purposes, including military features, and it is desirable that additional funds be provided as early as practicable for completing this group of buildings, to provide urgently needed accommodations for the administration officers of the post and engineer depot, as well as for the military functions of the school.

Amount appropriated by act of—	
June 30, 1902	$500,000
Mar. 2, 1903	360,000
Mar 2, 1905	150,000
Mar. 2, 1907	32,500
July 25, 1912	100,000
Total	1,142,500
July 25, 1912, amount expended to date	1,042,500
July 25, 1912, balance available	100,000

In addition $1,700 was appropriated in the Army appropriation act of March 3, 1909, for the completion of a stable. This work was done by the Quartermaster's Department.

The following are the items for which at present funds are most urgently needed for the service of the post, depot, and school, arranged in the order of relative urgency:

1. Completion of West Barracks			$40,000
2. Six double-sets noncommissioned officers' quarters			66,000
3. Bachelor officers' quarters			70,000
4. Group of buildings to include engineer school and administration buildings and power house and trade school building:			
Engineer school and administration building	$275,000		
Power house	27,500		
Trade school building	22,000		
		$324,500	
Less amount appropriated July 25, 1912		100,000	
			224,500

Under instructions from the Secretary of War, however, an estimate of only $40,000 is submitted this year to cover the completion of the West Barracks (Barracks No. 2).

It is understood that the estimate of the Chief, Quartermaster Corps, includes provision for the dispensary.

EQUIPMENT OF COAST ARTILLERY, ARMORIES ORGANIZED MILITIA.

The Army appropriation act approved March 3, 1911, provided the sum of $338,170 for the equipment of armory buildings provided by States for instructional purposes for Coast Artillery companies of the Organized Militia. With these funds equipments are being installed for the instruction of Coast Artillery militia at the following places:

Boston, Mass., South Armory.
Bridgeport, Conn.
New York City:
Ninth District Armory.
Thirteenth District Armory.
Savannah, Ga.
San Francisco, Cal.

For the work required the of Engineer Department in this connection the sum of $105,426.56 has been assigned to this department for expenditure by the Secretary of War. At the close of the fiscal year the engineer work at the Boston Armory had been completed so far as possible pending the arrival of the armament and other equipment, and the work remaining to be done at this armory and the necessary work at the other armories had been placed under contract.

By the Army appropriation act of August 24, 1912, the availability of this appropriation was extended to include obligations incurred during the fiscal year ending June 30, 1913.

Assigned to Engineer Department		$105,426.56
June 30, 1912, amount expended during fiscal year		8,906.63
July 1, 1912, balance unexpended		96,519.93
July 1, 1912, outstanding liabilities	$15,637.30	
July 1, 1912, covered by existing contracts	75,559.37	
		91,196.67
July 1, 1912, balance available		5,323.26

RIVER AND HARBOR IMPROVEMENTS.

Appropriations.—The funds with which the works for the improvement of rivers and harbors were prosecuted during the past fiscal year were derived from the appropriations made by the river and harbor act approved February 27, 1911, and the sundry civil act approved March 4, 1911, from such appropriations as have been provided by other general acts and by special acts of Congress, and from the available balances of former appropriations.

The following works are provided for by permanent appropriations: Removing sunken vessels; operating and care of dredge boats on upper Mississippi River; removing obstructions in Mississippi River; gauging waters of the Mississippi River and its tributaries; examinations and surveys at South Pass, Mississippi River; maintenance of South Pass Channel, Mississippi River; operating snag boats on Ohio River; operating and care of canals, etc.; support and maintenance of the Permanent International Commission of the Congresses of Navigation.

Total appropriations for rivers and harbors to June 30, 1911	[1] $693,914,237.68
Amount appropriated by river and harbor act approved July 25, 1912	31,059,370.50
Amount appropriated by sundry civil act approved Aug. 24, 1912	9,500,250.00

[1] Including permanent annual appropriations and related works.

Amount appropriated by deficiency act approved Aug. 26, 1912:		
Claims for damages by collisions, river and harbor works		$1,509.05
Claims allowed by Auditor of the War Department		181.88
Permanent annual appropriations (including $3,000 for the Permanent International Commission of the Congresses of Navigation		297,600.00
Apr. 3, 1912, Mississippi River, on account of floods		350,000.00
Apr. 16, 1912, Mississippi River, on account of floods		300,000.00
Apr. 30, 1912, Mississippi River, on account of floods		(1)
May 9, 1912, Missouri River, bank protection		50,000.00
Total		735,473,149.11
Expended under indefinite appropriations, fiscal year 1912:		
Operating and care of canals, etc	$2,222,709.71	
Removing sunken vessels, etc	64,848.74	
		2,287,558.45

RELATED WORKS.

Expenses of California Débris Commission (sundry civil act of Aug. 24, 1912)	$15,000.00	
Prevention of deposits, New York Harbor (sundry civil act of Aug. 24, 1912)	85,260.00	
International Waterways Commission (sundry civil act of Aug. 24, 1912)	10,000.00	
		110,260.00
		737,870,967.56

NOTE.—The river and harbor act of March 3, 1909, appropriated the sum of $9,435,750, which included the sum of $50,000 for the National Waterways Commission, which latter item was first credited to the War Department and later transferred to the Treasury Department.

Status of works.—Statements derived from the reports of the officers in charge of the various works, and given herewith, set forth the condition of each improvement and the extent of the work performed during the past fiscal year.

Expenditures.—The total amount actually expended under the direction of the Chief of Engineers in connection with the improvement of rivers and harbors during the fiscal year ending June 30, 1912, is as follows:

Rivers and harbors (general, including examinations, surveys, and contingencies)	$29,499,598.88
Removing sunken vessels	64,848.74
Operating and care of canals	2,222,709.71
Operating snag and dredge boats on upper Mississippi, Illinois, and Minnesota Rivers	23,442.40
Removing obstructions in Mississippi, Atchafalaya, and Old Rivers	97,978.58
Gauging waters of the Mississippi River and its tributaries	8,727.23
Maintenance of South Pass Channel, Mississippi River	78,234.60
Examinations and surveys at South Pass, Mississippi River	8,680.00
Operating snag boats on the Ohio River	40,263.83
Prevention of deposits in New York Harbor	101,796.29
California Débris Commission (expenses)	11,553.20
Permanent International Commission of Congresses of Navigation	2,557.57
Meeting of Permanent International Commission of Congresses of Navigation in the United States	13,881.99
International Waterways Commission	19,990.70

[1] This act appropriated $1,500,000, but provided that this amount should be deducted from the appropriation of $6,000,000 contained in the river and harbor act approved July 25, 1912.

Mississippi River Commission:		
Improving Mississippi River	$2,965,125.91	
Maintaining and protecting levees of the Mississippi River and tributaries against floods	455,094.73	
Rebuilding levees of the Mississippi River and tributaries damaged by floods	29,434.32	
		[1] $3,449,654.96
		35,643,918.68

This amount does not include expenditures for enlargement of Governors Island, New York Harbor, $75,484.94.

Expenditures have also been made, as follows, from funds contributed by States, municipalities, and private parties:

Contributed by State of California for improvement of Sacramento and Feather Rivers, Cal	$2,245.85
Contributed by citizens of Dallas, Tex., for improvement of Trinity River, Tex	9,834.23
Contributed by local interests for improvement of Sabine-Neches Canal, Tex	14,779.32
Contributed by State of Rhode Island for improvement of Pawtucket River, R. I	19,849.93
Contributed by Cape May Real Estate Co. for improvement of Cold Spring Inlet, N. J	2,000.00
Contributed by city of Wilmington, Del., for improvement of Wilmington Harbor, Del	6,541.34
Contributed by city of Augusta, Ga., for improvement of Savannah River, at Augusta	55,183.32
Contributed by citizens of Sioux City, Iowa, for improvement of Missouri River at Sioux City	15,208.20
Contributed by Union Terminal Railway Co. for improvement of Missouri River at St. Joseph, Mo	3,000.00
Contributed by Chicago & Alton Railway Co. for improvement of Missouri River at Glasgow, Mo	4,167.23
	132,809.42
Deduct part of contribution of Sioux City Stock Yards Co. returned, and reported as an expenditure in report for 1911	447.52
	132,361.90

Estimates.—The following estimates are submitted by the Chief of Engineers for the fiscal year ending June 30, 1914:

Under continuing contracts	$12,937,982
Rivers and harbors (general, including Mississippi River Commission, and examinations, surveys, and contingencies)	43,829,010
Under California Débris Commission (expenses)	15,000
Prevention of deposits in New York Harbor	153,260

These estimates are intended to cover only the minimum requirements for the prosecution and maintenance of the various improvements, such estimates having been made up from estimates prepared on the same basis by the various district officers; this being done in order to keep within the limited total estimate deemed advisable for the next fiscal year and on the supposition that river and harbor work will be provided for hereafter by annual appropriations.

The total amount recommended for appropriation in the next river and harbor bill (excluding examinations, surveys, and contingencies) is $43,579,010, to be applied to 288 works, and for appropriation in the sundry civil bill $12,937,982, to be applied to 38 works.

[1] Does not include $8,456.45 expended for "gauging waters of the Mississippi River and its tributaries," included in a separate item above.

Liberal appropriations are considered proper and desirable for snagging and other work necessary to make natural channels available wherever water-borne commerce exists or is reasonably prospective. It is believed that expenditures for such improvements are almost always useful and advantageous to the general public, especially since the introduction and rapid development of small gasoline motor boats for combined freight and passenger transportation. In many cases it is apparent that the failure to use a waterway is due not so much to lack of channel depth as to the presence of snags and other obstructions which can be removed at comparatively small cost, thus making the natural channel depths fully available throughout the year. When the boat commerce develops or its requirements become greater the existing clear channel will be in its best condition for further and more expensive improvements.

Improvements adopted by Congress, and not provided for in the estimates, have been omitted either on account of sufficiency of funds now available, on account of lack of urgency or of relative importance, on account of defective projects which were adopted many years ago and are in need of reexamination with a view to revision or abandonment, or in cases in which recommendations for appropriations for new projects have recently been submitted to Congress in special reports.

In the cases of several improvements recommendations will be found in the text of the report for contract authorizations to cover work to be executed after June 30, 1914. In these cases the additional work, on account of its character and to insure reasonable economy, should be included in contracts or otherwise provided for in connection with the work to be executed during the coming fiscal year.

Under existing law reexaminations of existing projects are made by the Board of Engineers for Rivers and Harbors in compliance with resolutions by either the Committee on Commerce of the Senate or the Committee on Rivers and Harbors of the House of Representatives; but these reexaminations are subject to the limitation that no enlargement of the scope of the project can be considered, so that desirable extensions of projects can not be recommended. It is believed that a similar provision of law authorizing the Chief of Engineers to cause a reexamination of projects, at least those not heretofore passed upon by the Board of Engineers for Rivers and Harbors, would be in the public interest. Projects reported under the provisions of section 7 of the river and harbor act of March 3, 1899, as unworthy of further improvement by the United States or considered by the Chief of Engineers as in need of revision could in this way be fully investigated, local interests could be heard, and formal report thereon made for the consideration of Congress. It would seem advisable in connection with any such reexamination to grant authority to consider and report upon any modifications in the nature of enlargements in scope of projects believed to be desirable, when such modifications are recommended by district officers or otherwise brought to the attention of the department.

If desired by Congress for its consideration in providing for new works, reports could be submitted by the Board of Engineers for Rivers and Harbors and the Chief of Engineers upon the relative importance of the various improvements recommended as worthy of being undertaken by the United States, the order in which the works

should be taken up, and the rapidity with which they should be completed, upon methods of standardization by which the waterways of the country could be improved uniformly in proportion to their capacities and to the existing or probable demands of general commerce, or even report upon a systematic scheme of such improvement embracing all waterways, whether heretofore examined and reported upon or not.

Engineer divisions.—The engineering works in charge of this office are arranged in divisions, and officers of the Corps of Engineers were assigned as division engineers to overlook these works, as follows:

East of the Rocky Mountains: Northeast division, Col. W. M. Black; eastern division, Col. William T. Rossell; southeast division, Col. Dan C. Kingman; Gulf division, Lieut. Col. Lansing H. Beach; western division, Lieut. Col. Charles L. Potter; central division, Lieut. Col. H. C. Newcomer; Lakes division, Col. C. McD. Townsend. West of the Rocky Mountains: Pacific division, Col. John Biddle to July 20, 1911, and Lieut. Col. Thomas H. Rees since that date; northern Pacific division, Col. John Biddle to July 20, 1911, and Lieut. Col. Thomas H. Rees since that date, temporarily in charge.

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CALIFORNIA DÉBRIS COMMISSION.

Unrestricted mining by the hydraulic process in California resulted in enormous quantities of débris being washed down into the rivers and natural watercourses draining the western slopes of the Sierras. Later on hydraulic mining was practically prohibited by the decisions of the courts on account of injury to streams and the adjacent private land.

The act of Congress approved March 1, 1893, created the California Débris Commission and provided that the commission should consist of three officers of the Corps of Engineers, appointed by the President, with the concurrence of the Senate. The same act prescribed the duties of the commission, which are, first, the regulation of hydraulic mining in the territory drained by the Sacramento and San Joaquin River systems (shown on map opposite p. 2492, part 3, of the Annual Report of the Chief of Engineers, United States Army, for 1881) so that mining by that method may be resumed and carried on without injury to other interests in the State; and, second, to mature and adopt plans to improve the navigability of the above-mentioned river systems, to protect same from damage due to mining débris and to afford relief thereto in flood time.

Regulation of hydraulic mining and plans for improvement and protection of rivers and control of flood waters and mine débris.—Up to June 30, 1912, the commission received 889 applications for permits to mine by the hydraulic process under the restrictions imposed by the act of Congress of March 1, 1893, and granted permits in cases where means for properly impounding the débris were provided by the applicants.

Since its creation in 1893, the commission has made examinations and surveys of portions of the Sacramento, San Joaquin, Feather, Yuba, Bear, American, Mokelumne, and other tributaries of the Sacramento and San Joaquin Rivers and submitted plans for the storage of mine débris in Yuba River and for the control of floods and débris in the Sacramento and Feather Rivers.

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SURVEY OF INTRACOASTAL WATERWAYS FROM BOSTON, MASS., TO THE RIO GRANDE, REQUIRED BY THE RIVER AND HARBOR ACT OF MARCH 3, 1909.

The river and harbor act of March 3, 1909, directed certain surveys to be made with a view to the construction of a continuous waterway, inland where practicable, from Boston, Mass., to the Rio Grande, which were assigned to boards of engineers.

Report dated October 4, 1911, with maps, by the special board of Engineer officers, upon the survey of that section of the proposed continuous inland waterway from Boston, Mass., to Beaufort Inlet, N. C., was duly submitted, and was reviewed by the Board of Engineers for Rivers and Harbors, pursuant to law, and its report thereon submitted December 12, 1911. These reports were transmitted to Congress and printed in House Document No. 391, Sixty-second Congress, second session. Projects and estimates for improvement of the following sections are presented:

Boston to Narragansett Bay section	$40,000,000
Narragansett Bay-Long Island Sound section	12,322,000
New York Bay-Delaware River section	45,000,000
Delaware River-Chesapeake Bay section	12,424,500
Norfolk-Beaufort Inlet section	5,400,000

Only the last two sections named above were recommended for adoption at the present time.

It is expected that the reports of the other boards on the sections between Beaufort Inlet and the Rio Grande will be transmitted to Congress during its next session.

MISSISSIPPI RIVER COMMISSION.

The Mississippi River Commission, constituted by act of Congress of June 28, 1879, is in charge of the improvement of the Mississippi River from Head of Passes to the mouth of the Ohio River, including the rectification of Red and Atchafalaya Rivers at their junction with the Mississippi, the building of levees, and the improvement of the several harbors for which specific appropriations have been made, with the exception of the harbor of Vicksburg and the mouth of Yazoo River. It is also charged with the survey of the Mississippi River from Head of Passes to its headwaters, and with gauging the river and its tributaries.

The river and harbor acts of March 3, 1905, and March 2, 1907, prescribed that the money therein appropriated and authorized to be expended should be applied to the construction of suitable and necessary dredge boats and other devices and appliances and in the maintenance and operation of the same, with the view of ultimately obtaining and maintaining a navigable channel fron Cairo down not less than 250 feet in width and 9 feet in depth at all periods of the year, except when navigation is closed by ice. They also authorized allotments from such funds in the discretion of the commission and upon approval by the Chief of Engineers, to be applied to the watercourses connected with the river and the harbors upon it now under the control of the Mississippi River Commission.

Act of Congress approved June 4, 1906, provides that any funds which have been, or may hereafter be, appropriated by Congress for improving the Mississippi River between the Head of Passes and

the mouth of the Ohio River, and which may be allotted to levees, may be expended under the direction of the Secretary of War, in accordance with the plans, specifications, and recommendations of the Mississippi River Commission, as approved by the Chief of Engineers, upon levees upon any part of said river between the Head of Passes and Cape Girardeau, Mo.

The appropriations under continuing contracts authorized by the act of March 2, 1907, have been completed, and further appropriations are now being made annually, that of February 27, 1911, being for $3,000,000.

Emergency appropriations have been made by Congress during the past fiscal year, for expenditure under the commission, as follows:

Act of April 3, 1912 (Public—No. 112), appropriated $350,000 for the purpose of maintaining and protecting against impending floods the levees on the Mississippi River. This act was amended by joint resolution of April 9, 1912 (Public Resolution—No. 25), so as to make the appropriation available for the purpose of maintaining and protecting against impending floods the levees on rivers tributary to the Mississippi River.

Act of April 16, 1912 (Public—No. 122), appropriated $300,000 for the purpose of maintaining and protecting against the impending flood the levees on the Mississippi River and rivers tributary thereto.

Joint resolution of April 30, 1912 (Public Resolution—No. 30), appropriated $1,500,000 for rebuilding such portions of the levees on the Mississippi River and its tributaries as may have been or may hereafter be broken by the existing flood in said rivers, or so materially weakened as to necessitate rebuilding; and provided that so much of this appropriation as might be expended should be deducted from the appropriations that shall first hereafter be made for improving the Mississippi River from Head of Passes to the mouth of the Ohio River.

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PERMANENT INTERNATIONAL COMMISSION OF THE CONGRESSES OF NAVIGATION.

By act approved June 28, 1902, Congress appropriated the sum of $3,000 per year for the support and maintenance of the Permanent International Commission of the Congresses of Navigation and for the payment of the actual expenses of the properly accredited national delegates of the United States to the meeting of the congresses and of the commission.

At the beginning of the fiscal year the United States was represented on the Permanent International Commission of the Congresses of Navigation by Brig. Gen. C. W. Raymond, United States Army, retired; Brig. Gen. W. H. Bixby, Chief of Engineers, United States Army; Col. Harry F. Hodges, Corps of Engineers, United States Army; Lieut. Col. J. C. Sanford, Corps of Engineers, United States Army; Mr. Elmer L. Corthell; Mr. John Bogart; Hon. J. Hampton Moore, Member of Congress. The representation on the commission has remained unchanged during the year.

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RULES AND REGULATIONS FOR THE NAVIGATION OF STREAMS ON WHICH THE FLOATING OF LOOSE TIMBER AND SACK RAFTS OF TIMBER AND LOGS IS THE PRINCIPAL METHOD OF NAVIGATION.

Under the provisions of act of Congress approved May 9, 1900, "An act authorizing the Secretary of War to make regulations governing the running of loose logs, steamboats, and rafts on certain rivers and streams," the Secretary of War has prescribed no rules and regulations for such navigation on any stream during the fiscal year ending June 30, 1912.

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IMPROVEMENT AND CARE OF PUBLIC BUILDINGS AND GROUNDS, THE CARE AND MAINTENANCE OF THE WASHINGTON NATIONAL MONUMENT AND OF THE HIGHWAY BRIDGE ACROSS THE POTOMAC RIVER, D. C., AND UPON THE ERECTION OF MONUMENTS, MEMORIALS, ETC., WASHINGTON, D. C., DURING THE FISCAL YEAR ENDING JUNE 30, 1912.

Officer in charge, Col. Spencer Cosby, United States Army, major, Corps of Engineers.

Miscellaneous repairs were made in and about the Executive Mansion. The entire exterior of the mansion, including the east and west terraces, was repainted, and some painting was done in the interior. The furniture was regularly cared for, and necessary repairs were made to it. In the building for the offices of the President the exterior and all the woodwork in the interior were painted. The President's stable, in the park opposite Seventeenth and E Streets NW., was torn down, and the ground occupied by it improved by grading, soiling, seeding, and rolling. This work was done in accordance with authority contained in the sundry civil act approved March 4, 1911, which provided $1,000 for the purpose. In accordance with the terms of the act, accommodations for the horses, carriages, and other vehicles of the President and of the Executive Office were provided in the stables of the Quartermaster's Department, located at Nineteenth Street and Virginia Avenue NW. The frame building in the rear of the President's stable, used as a stable by the office of Public Buildings and Grounds, was moved to the propagating gardens in the Monument Grounds, to be used as a storehouse. Repairs were made to the greenhouse structures and to their heating apparatus, and four cold frames were constructed. A change was made in the system of lighting the White House grounds.

The care required to maintain them in good condition was extended to the improved parks and small reservations. One additional park space was transferred to the Chief of Engineers by the Commissioners of the District of Columbia. There was also transferred to the office of Public Buildings and Grounds the reservation in Georgetown containing the old high-service reservoir, which is no longer needed as part of the system for distributing the water supply of the city. The estimates submitted for the service of the fiscal year ending June 30, 1914, include an item for the improvement of this reservation with the view of making it a part of the park system. Ground on Meridian Hill was also brought into the park system under the terms of an act of Congress providing for its condemnation, and the additional ground in the same tract will also be acquired as soon as its purchase is completed. One unimproved reservation was improved,

and one partially improved reservation was extensively improved. Considerable work for the improvement of the interior portion of Potomac Park was accomplished. A new bituminous macadam roadway was constructed in Potomac Park Annex near the Tidal Basin outlet, and a similar road was constructed in Potomac Park just across the outlet. One thousand eight hundred Japanese cherry trees, the gift of the city of Tokyo, were planted around the Tidal Basin in that park. Work was started on the construction of a park lodge in Potomac Park. The work of filling the old fishponds in the Monument Grounds was completed. The improvement of the terraced reservation on Twenty-second Street, near S Street, was completed, and the reservation in Mount Pleasant (310–A) which was acquired from the Commissioners of the District of Columbia in April, 1911, was developed as an intimate neighborhood park. The section of Judiciary Park around the new Court of Appeals Building was redesigned to bring it more in harmony with the architectural features of that building. Various changes and additional landscape improvements were made in two of the circles and in many of the small triangular reservations. One of the old gravel roads in the Smithsonian Grounds was resurfaced with bitulithic macadam. New walks were laid out and other changes made in Garfield Park.

A new and improved system of lighting the parks was adopted and its installation nearly completed; 6,323 feet of water pipe and 3,240 feet of drainpipe were laid; 2,096 square yards of cement walk and 353 linear feet of cement curbing were laid; 620 square yards of asphalt walk, 127 square yards of bituminous macadam walk, and 104 square yards of brick walk were constructed, and 140 square yards of asphalt road and 935 square yards of asphalt walk were repaired; 3,401 feet of coping were built around 12 reservations; 2,600 square yards of gravel roads were surfaced with bitulithic macadam, and 7,800 square yards of old macadam roads were similarly resurfaced; 3,216 square yards of bitulithic macadam roads were constructed; 3,450 square yards of macadam roads were oiled for the first time, 103,000 square yards were oiled for the third time, and 20,000 square yards were oiled for the fourth time, the other applications having been given in previous years; 9,808 square yards were surface treated with coal tar for the first time, 25,730 square yards were given a second application, and 3,400 square yards a third application, the other applications having been given in previous years; 5,700 square yards of macadam road in the White House grounds were surface treated with sulphite liquid for the first time; 143 park benches were repaired and 252 were repainted; 1,100 cubic yards of stable manure were used upon lawns and for mulching around shrubs and young trees; 45 tons of shredded cattle manure, 150 barrels of air-slaked lime, and 10 tons of bone meal were also used on lawns; an iron post-and-chain fence was placed along the west side of Garfield Park; the iron post-and-chain fence around one reservation was taken down and removed and replaced with cement coping.

At the Washington Monument all the iron and wood work in the shaft were painted and new sash were made and painted for the windows at the top.

At the propagating gardens the various greenhouse structures were repaired as far as funds would permit. The superstructure of one

house was entirely reconstructed. The superstructures of three other houses were taken down and one new superstructure erected to cover the area formerly covered by the three. A windstorm in July wrecked the superstructure of a palm house. This was reerected, glazed, and painted. Over 670,000 plants were propagated, of which nearly 630,000 were planted in the parks and reservations.

At the house where Abraham Lincoln died miscellaneous repairs were made, including some painting.

Inspections were made each month of the buildings occupied as offices by the War Department, except the State, War, and Navy Department Building, so far as their preservation, care, and safety are concerned.

Considerable painting was done to the ironwork of the Highway Bridge across the Potomac River, D. C. Repairs were made to the asphalt roadway on the bridge, and also to the granitoid pavement on the approaches, a portion of the latter work having been done by the contractors who laid the pavement under the guaranty clause in their contract.

Repairs were made to the post-and-wire fence along either side of the road leading from the Government wharf to the monument at the birthplace of Washington, at Wakefield, Va. The brush along this roadway was cut. On the night of January 19–20 18 spans of the wharf were destroyed by ice. There now remain only 37 spans of the 69 that were constructed.

The monument to John Paul Jones was erected, completed, and unveiled, and the memorial to Christopher Columbus was also erected and unveiled, but not quite completed, some dressing of the stones of the pedestal being still required. The artillery group for the memorial to Gen. Ulysses S. Grant was cast in bronze and placed in position upon its pedestal. A contract was entered into for the construction and erection of the statue of Commodore John Barry, and the half-size clay model of the figure of "Victory" for the pedestal has been completed by the sculptor, who is also the contractor, and approved by the Commission of Fine Arts.

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PRESERVATION OF NIAGARA FALLS.

The act of Congress approved June 29, 1906, "For the control and regulation of the waters of Niagara River, for the preservation of Niagara Falls, and for other purposes," authorized the Secretary of War, in his discretion, to grant permits for the diversion of water on the American side for power purposes, up to a limit of 15,600 cubic feet per second, and permits for the transmission of electrical power from Canada up to a limit of 160,000 horsepower. The act further authorized the granting of similar permits "For the diversion of additional amounts of water from the said river or its tributaries to such amount, if any, as in connection with the amount diverted on the Canadian side shall not injure or interfere with the navigable capacity of said river or its integrity and proper volume as a boundary stream or the scenic grandeur of Niagara Falls." On the recommendation of the Chief of Engineers, the study of the technical questions involved, requiring surveys and hydraulic measurements similar to those ordinarily made by the Lake Survey, was assigned by the Secre-

tary of War on March 20, 1907, to the officer in charge of that survey, and various successive allotments have been made to defray the expenses of the investigations.

In 1906, previous to this assignment, the Lake Survey had initiated the study of hydraulic conditions in the Niagara River in connection with surveys for chart purposes in the vicinity of Niagara Falls, which work is briefly described on pages 2457–2458, Annual Report of the Chief of Engineers for 1907. Subsequent observations and measurements have been made to compare the more recent law of outflow of the Niagara River with that determined in 1898–1900, to determine the volume of diversions in the canals of the power companies on the American side and in the Erie Canal with the corresponding development of power, to derive equivalent lake and river heights, to determine current lines, depths, and contours in and above the rapids, to observe the effect of diversions on the depths over the Falls and on the continuity of their crest lines, and for other related studies.

The principal results of the work under the general project were submitted in a special report dated November 30, 1908, and in a supplementary report dated September 21, 1909, which contain detailed accounts of the investigations above outlined. These reports are published in Senate Document No. 105, Sixty-second Congress, first session. A comprehensive report summarizing and supplementing the above reports and containing a narrative history of the operations of the United States Lake Survey under appropriation "Preservation of Niagara Falls" from June 29, 1906, to June 29, 1911, was submitted by that office under date of September 30, 1911, and was published in House Document No. 246, Sixty-second Congress, second session.

The act of June 29, 1906, expired by limitation on June 29, 1911, and operations under the appropriations were then temporarily suspended. The provisions of the act were extended to March 1, 1912, by joint resolution of Congress approved August 22, 1911, and were again extended to March 4, 1913, by joint resolution of Congress approved April 5, 1912. Operations have been continued during the year except for the periods during which the law lapsed.

The permits granted by the Secretary of War under the provisions of the act of Congress of June 29, 1906, authorized an aggregate diversion of 15,600 cubic feet of water per second on the American side for power purposes, and the transmission from Canada of an aggregate of 158,500 electrical horsepower. They are briefly summarized on page 895 of the Annual Report of the Chief of Engineers for 1908. On August 16, 1907, the supervision of the operations of the power companies thereunder was assigned by the Secretary of War to Capt. (now Maj.) C. W. Kutz, Corps of Engineers, and on August 14, 1908, upon the departure of Capt. Kutz to a new field of operations, the duty was transferred by him to the officer in charge of the survey of the northern and northwestern lakes. This duty has continued to the end of the last fiscal year, except during the intervals from June 29 to September 11, 1911, and from March 1 to April 27, 1912, these being the periods in each case between the expiration of the law and the receipt by the officer in charge of the work of supervision of official notification to resume operations.

The power plants of the several companies concerned have been frequently inspected and the detailed results of such inspections have

been placed on file in the Lake Survey Office, and summaries duly reported to the Chief of Engineers. During the year three separate inspections of the power stations of the Niagara Falls Hydraulic Power & Manufacturing Co. have indicated diversions of water in excess of the maximum allowance under its permit. On the two earlier occasions—December 14, 1911, and January 3, 1912—the company was without the limitation of switchboard output which was later prescribed, and its estimated consumption of water was then based on its own values of the efficiency of its plant. Measurements of flow in the company's canal which were made by the Lake Survey December 1–8, 1911, and reduced in January, 1912, gave somewhat lower values for the efficiency of development than those derived by the company, and it was by the Lake Survey values that the consumption of water was determined to be excessive. In view of the fact that the violation of its permit was apparently unintentional, the Secretary of War, under date of February 28, 1912, concurred in the recommendation that no action in these instances be taken against this company under section 3 of the act of June 29, 1906. The third instance wherein the diversion of water was indicated to be in excess of the maximum amount of the permit occurred on May 14, 1912, after the permissible switchboard output had been prescribed. Federal action regarding this excessive diversion is now under consideration by the Secretary of War. Except in the cases above cited, the inspections indicate that all power and transmission companies have loyally observed the limitations of their respective permits during the past year.

The Niagara Falls Power Co. has continued the remodeling of generating units in its power house No. 1 by the installation of new turbines and the addition of draft tubes. The rebuilt units are essentially identical with unit No. 10 in power house No. 1, the remodeling of which was noted on page 1113, Annual Report of the Chief of Engineers for 1911. To verify the tests and deductions made during the previous year the Lake Survey Office, in October, 1911, cooperated with the power company in repeating these tests on units Nos. 9 and 10. The results were in accordance with those of the previous tests giving efficiencies for the remodeled units of practically the same value as the efficiencies of the units in power station No. 2. In response to a request from the company, an amended table of switchboard limitations similar in form to the one published on page 2724, Annual Report of the Chief of Engineers for 1910, was made effective October 10, 1911. This second amendment of the original restrictions was made for the purpose of giving to the company the benefit of the increased efficiency of its plant, due to the remodeling of the second unit in power house No. 1. The table was issued for temporary use, pending the results of new efficiency tests. These tests proved satisfactory, and another table was immediately prepared which will accommodate conditions during and succeeding the remodeling of all units in power station No. 1. This last table will be found in Appendix F F F 2. The restrictions on permissible switchboard output prescribed by the several tables which have been issued, are based on the efficiency curves derived from the measurements of 1909, the derivation of which is explained in the special report of September 21, 1909, published in Senate Document No. 105, Sixty-second Congress, first session. The remodeled generating units are considered equivalent in efficiency to the units in station No. 2.

As the diversions of the Niagara Falls Hydraulic Power & Manufacturing Co. were rapidly approaching the limit allowed by its permit from the Secretary of War, measurements of flow in the company's canal were made in December, 1911, to verify the estimated diversion and to determine the relation between the consumption of water and the output of power in order that restrictions in terms of switchboard output corresponding to allowable diversion could be formulated as a means to easy and effective supervision. Twenty-five independent measurements were made during which simultaneous switchboard readings were taken in both power stations. Owing to the operating conditions, it was not practicable to greatly vary the output, and accordingly it was not possible to determine efficiency curves covering a wide range of conditions. The results, however, give a closely accurate relationship between the consumption of water and the power output for the operating conditions at the time of measurement, and it was determined that for such conditions an aggregate output from the two power stations of 78,200 kilowatts represents the allowable use of water by this company under its permit, after deducting the amount of water used in mills of tenant companies. This restriction, which was informally communicated to the company on January 13, 1912, was later approved by the Secretary of War and will continue as a measure of operating limitations for this company during the life of its present permit or until such time as material improvement in the efficiency of development has been demonstrated.

The operations during the fiscal year, additional to the supervision of power and transmission companies, consisted largely in continued study of slope relations and the effects of continually increasing diversions upon lake and river heights and upon the integrity of the Falls. Several special reports were prepared in the Lake Survey Office during the year on this and other subjects pertaining to preservation of Niagara Falls.

A public hearing was held in Detroit, Mich., on February 1, 1912, concerning the application of the Federal Light & Power Co., of Detroit, Mich., for permission from the Secretary of War to receive at the international boundary in the Detroit River and to transmit into Detroit, Mich., electrical power generated in the Dominion of Canada from waters of the Niagara River. Action on this application is still pending.

Owing to the anticipated termination on June 29, 1911, of the act pertaining to the preservation of Niagara Falls, and in view of the uncertainty of subsequent legislation by Congress, gauges were not established on the Niagara River for the 1911 season. River levels are being recorded during the present season by five automatic gauges reestablished at critical points above and below the Falls, and the records of these will afford valuable data for the continued study of river slopes.

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IMPROVEMENT OF YELLOWSTONE NATIONAL PARK, INCLUDING THE CONSTRUCTION, REPAIR, AND MAINTENANCE OF ROADS AND BRIDGES.

Officer in charge: Capt. C. H. Knight, Corps of Engineers.

The Yellowstone National Park was set apart from the public domain and placed under the control of the Secretary of the Interior

by act of Congress of March 1, 1872. The sundry civil act of March 3, 1883, directed the construction and improvement of suitable roads and bridges under the supervision of an Engineer officer to be detailed by the Secretary of War, and in July, 1883, an Engineer officer was designated accordingly. This was the beginning of systematic road construction in the park. The previous work consisted of the opening of such rough trails as the limited means permitted, but they were temporary in character and of little or no value in the permanent plan. Subsequent to the sundry civil act of August 4, 1886, the expenditure for the improvement was transferred to the War Department, and it has since been in the charge of the Engineer Department, with the exception of the period from August, 1894, to March, 1899.

At the outset the officer of the Corps of Engineers in charge adopted a project (described in the Annual Report of the Chief of Engineers for 1887, p. 3134) for a comprehensive system of substantial roads, which, with the change of the act of Congress of March 3, 1891, is the basis of the present system. The sundry civil act of June 6, 1900, directed that the road extensions and improvements should thereafter be made in harmony with a general plan to be approved by the Chief of Engineers. Such plan was approved August 27, 1900, modified by the authority of the Secretary of War, dated July 22, 1901, and further modified by the approval of the Chief of Engineers, dated July 2, 1902. The sundry civil act of June 28, 1902, recognized this project and provided for its completion, and it was practically finished during the fiscal year ending June 30, 1906. The road system comprises a belt line or main circuit, which reaches all of the important centers of interest, with side roads, bridle trails, and four approaches leading from the park boundary to different points on the belt line; in all, about 350 miles of road and about 125 bridges. The present project provides that the belt line and the approach road from the north entrance be thoroughly metaled with crushed rock, gravel, or other good material; that iron pipe, tile, or other permanent material be used for culverts; that steel and concrete be used for bridges; and that roads on the main tourist route be sprinkled. Roads into the park, except from the north, are constructed and maintained as earth roads.

The sum expended to June 30, 1912, including maintenance and repairs, is $2,046,384.42. It is estimated that not less than $200,000 of this amount was expended in early work which has since been replaced and does not form a part of the completed system. Maintenance and repairs have cost about $731,001.37, leaving about $1,115,383.05 for the cost of the permanent work. In addition, there has been expended on work done for other departments the sum of $850.95, for which the park appropriation has been reimbursed.

For several years past the Annual Reports of the Chief of Engineers have called attention to the need for larger appropriations for maintaining the park improvements, for repairing the progressive deterioration of the road system, and for repairing and replacing old and unsafe structures. The experience of the past fiscal year well illustrates the practical impossibility of maintaining the road system in proper condition with the appropriations provided. The estimate submitted for the service of the fiscal year ending June 30, 1912, was $75,000, and, as was stated in a footnote on page 1055 of the

Annual Report of the Chief of Engineers for 1910, the full amount of this estimate was needed to provide for maintenance, and made little or no provision for betterments.

The sundry civil act approved March 4, 1911, appropriated but $70,000 for the work during the fiscal year 1912, and provided furthermore that $2,500 of that sum should be expended for maintenance of roads leading out of the park from the east and south boundaries. Conditions had reached a point where the safety of tourists had become a matter of grave concern, and that appropriation was therefore carefully allotted with a view to replacing by safe structures certain old bridges which were considered menaces to life, and to repairing and maintaining the roadbed in safe condition, including the sprinkling of the roads, regarded as a part of maintenance work as well as a provision for the comfort of those who use them. The work accomplished included general repair and maintenance of the entire system, including the Cooke City, East, West, and South Roads; the construction of three steel bridges and a number of small wooden bridges; repairs to bridges and culverts; the clearing of dead and fallen timber from the roadside; the sprinkling of 100 miles of road; the conversion of a number of pumping stations into gravity tanks, and the installation of hydraulic rams; repairs to sprinkling wagons, road graders, carts, and other vehicles; and the maintenance of trees, shrubs, vines, and lawns. Sprinkling was continued as long as funds could be spared for the purpose, and discontinued early in August, but only when the available balance remaining was reduced to an amount barely sufficient to pay the ordinary running expenses sufficient for the remainder of the fiscal year and the cost of the new bridges contracted for and urgently needed. Immediately after sprinkling operations were stopped protests against such discontinuance were received from prominent persons and the President called for a special report on the matter. The engineer officer in local charge of the road work had already reported that the action was occasioned by lack of funds, and he stated, furthermore, that rains had left the road in poor condition, and that the suspension of sprinkling and the limitations on other works, due to the lack of funds, was likely to result in serious damage before the end of the tourist season and to leave the roads in poor shape to meet the winter storms. By oral direction of the Secretary of War a special estimate was prepared for continuing the work of sprinkling and for contingencies likely to arise before the next appropriation became available. The amount named was $12,000. The estimate was submitted to Congress August 19, 1911, and was published in House Document No. 111, Sixty-second Congress, first session, but no appropriation was made.

On April 20, 1912, the acting superintendent of the park informed the Secretary of the Interior that the main entrance road, between Fort Yellowstone at Mammoth Hot Springs and the railroad station at Gardiner, Mont., would probably soon be closed, as the hillside was gradually slipping into the road. He further stated that it was absolutely necessary to keep that road open for the full year, and that to have it closed then when supplies for the summer were coming in for the park concessionnaires and for the military post would be a calamity. He also stated that the dangerous part had been kept open during the autumn and winter by the labor of troops, but that an immense amount of earth must be removed before the road would be safe to travel.

On April 30, 1912, the retaining wall and a portion of the road at the point in question slid into the river, leaving a passageway but 3 feet in width. As the engineer officer in charge of the road work was without means for restoring wagon communication between Fort Yellowstone and Gardiner, the acting superintendent of the park sent a detachment of 40 men from the fort and widened the passageway to 6½ feet. A detachment was also employed throughout the month of May in repairing the retaining wall and keeping the road cleared of rock and dirt at the point where the slide occurred.

May 15, 1912, a special supplemental estimate of $20,000 for emergency repairs to roads in the park was submitted to Congress. This estimate was published in House Document No. 761, Sixty-second Congress, second session, but no appropriation was made. In May the Interior Department allotted the sum of $500 for opening the old wagon trail between Fort Yellowstone and Gardiner. The work was executed under the direction of the engineer officer, and completed on June 21.

No appropriation was made by Congress for the work during the fiscal year and there were no funds available in the hands of the engineer officer for opening the roads for the tourist season of 1912. The expenditures during the fiscal year for maintenance and repairs were $36,524.62 and for permanent work $22,713.88, a total expenditure of $59,238.50.

In response to a Senate resolution, dated April 2, 1912, directing the Secretary of War—

> to submit to the Senate as early as possible an estimate of the cost of construction of new roads or changes in the present roads in the Yellowstone National Park in order to permit of the use of automobiles and motor cycles therein without interfering with the present mode of travel in vehicles drawn by horses or other animals—

a report on the subject prepared by Capt. Knight was sent to Congress with a letter of the Acting Secretary of War, dated June 26, 1912. It was printed in Senate Document No. 871, Sixty-second Congress, second session. The estimated cost of construction of new roads for the purpose was $2,704,030 and for reconstruction of the existing road $2,264,670. The annual cost of maintenance was placed at $187,625 in case new roads are constructed, and at $112,886 if the existing roads are widened.

It is proposed to apply the $150,000 estimated as a profitable expenditure during the fiscal year ending June 30, 1914, to work of maintenance and repair, together with the replacing of certain wooden bridges with bridges of steel and concrete, the replacing of wooden culverts with culverts of vitrified pipe and of concrete, the sprinkling of the roads, the replacing of certain dry rubble walls with walls of rubble laid in mortar, and for the repair and improvement of the roads and bridges of the approaches in the forest reserves east and south of the park. The sum of $150,000 is the least which should be appropriated for the next fiscal year and practically all of that amount will be needed to place and maintain the existing road system in a safe condition, leaving little or nothing for betterments. The appropriations for the past seven years have proven entirely inadequate for maintenance, and the bad results are cumulative, so that the need for larger appropriations is more urgent each year. There is already urgent need for the immediate replacement of certain old and worn-out bridges which, in their present condition are a positive menace to the lives of travelers, and the entire road

surface is in a poor and worn-out condition and in need of a more thorough treatment than can be given with the small appropriations made during the past few years.

* * * * * * *

REMOVAL OF WRECK OF U. S. BATTLESHIP "MAINE" FROM THE HARBOR OF HABANA.

The removal of the wreck of the *Maine* from Habana Harbor is being carried on with appropriations aggregating $900,000, made in the acts of May 9 and June 25, 1910; March 4 and December 22, 1911, by a board of engineer officers convened by paragraph 1, Special Orders, No. 36, Office Chief of Engineers, August 2, 1910, consisting of Col. W. M. Black, Lieut. Col. M. M. Patrick, and Maj. H. B. Ferguson.

The project for removing the wreck after first exposing it within a cofferdam was approved by the President October 13, 1910.

In addition to the removal of the wreck it was required: (1) That the remains of the men who went down with the vessel and which had not been recovered should be found if possible and removed to the Arlington National Cemetery for burial; (2) that the mainmast of the ship should be sent to the Arlington Cemetery and there re-erected; (3) that the wreck should be so exposed, without derangement of its parts, as to permit all information possible to be obtained as to the nature and location of the explosion or explosions which caused the disaster.

Reports relative to the removal of the wreck and the progress thereof are printed in House Document No. 919, Sixty-first Congress, second session; Senate Document No. 765, Sixty-first Congress, third session; and in Annual Report of the Chief of Engineers, United States Army, for the fiscal year 1911, pages 1119 and 3039. Plan of the locality and photographs of the wreck are included in the last-named document. In November, 1911, the work had progressed sufficiently to permit of the examination of the parts of the wreck as contemplated by Congress and mentioned in the last annual report. (See fourth paragraph, p. 3041, Report of the Chief of Engineers, U. S. Army, 1911.) A report of the board appointed for this duty by the Secretary of the Navy is contained in House Document No. 310, Sixty-second Congress, second session.

The cofferdam was strengthened by placing steel bands around some of the cylinders, by putting in braces, and by banking clay and rock against the interior of the cylinders. Three hundred and four cubic yards of concrete, 16,648 cubic yards of rock, and 5,187 cubic yards of clay were used during the year.

The dam was completely unwatered in October and kept empty until February, during which time the wreck was cleaned of mud and cut in two just forward of frame 41; the intact portion was prepared for floating; the forward portion, as far as possible, was cut into pieces that could be handled by derricks, and the greater portion removed to sea; articles of value were recovered; and the remains of the dead found. The cleaning of the wreck for inspection required the removal of about 5,300 cubic yards of mud.

The remains of 66 bodies were found during the year and sent to Arlington National Cemetery for burial. The mainmast was sent to Arlington Cemetery for erection. The after turret and two 10-inch

guns were given to the Cuban Government, and all personal property and other articles of value turned over to the Navy Department.

The after portion of the wreck was floated February 12 and towed to sea and sunk with appropriate ceremonies March 16, 1912.

The work of restoring the site was begun in February. Up to June 30, 42,855 cubic yards of clay and rock, 3,146 steel piles, and 2,050 tons of wreckage had been removed.

Up to June 30, 1912, $696,449.34 had been expended, $110 being received from sales. Work is about 90 per cent completed.

July 1, 1911, balance unexpended	$292,708.11
Received by transfer from other appropriations	1,810.67
Amount appropriated by urgent deficiency act approved Dec. 22, 1911	250,000.00
	544,518.78
June 30, 1912, amount expended during fiscal year, for works of improvement	339,157.45
July 1, 1912, balance unexpended	205,361.33
July 1, 1912, outstanding liabilities	[1] 31,282.80
July 1, 1912, balance available	174,078.53
July 1, 1912, amount covered by uncompleted contracts	60,598.76

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W. H. BIXBY,
Chief of Engineers, U. S. Army.

The SECRETARY OF WAR.

REPORT OF THE CHIEF SIGNAL OFFICER.

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
Washington, October 15, 1912.

SIR: I have the honor to submit my annual report of the operations of the Signal Corps of the Army for the fiscal year ended June 30, 1912. The subject matter of the report is treated under the following headings:

I. Operations of the Signal Corps in Alaska, the Philippine Islands, and the United States.
II. Fire-control installations for coast defense.
III. Field companies of the Signal Corps.
IV. Radiotelegraphy.
V. Military aeronautics.

OPERATIONS OF THE SIGNAL CORPS IN ALASKA, THE PHILIPPINE ISLANDS, AND THE UNITED STATES.

ALASKA.

The Washington-Alaska military cable and telegraph system now embraces 2,621 miles of submarine cable, 1,064.5 miles of land lines, and 10 radio stations.

The cable system has satisfactorily handled the large volume of business sent over it, as have the land lines and radio stations. There

[1] Includes $11,000 pledged for erection of mast.

has been no material change in the cable and land line mileage, and the number of interruptions were fewer than last year.

The total "this line" receipts during the year were $176,756.22, while "other line" receipts amounting to $29,792.10 were collected and turned over to commercial companies. Official messages to the value of $182,641.94 were handled. This is an increase over 1911 in the total money value of business handled for the year of $33,890.98. Telegraphic money transfers to the value of $58,104.11 were effected. The tolls therefrom amounted to $612, exclusive of message tolls. It is to the credit of the enlisted personnel of the Army that the statement can be made that there were no losses in accounting for this large sum of money.

No new telegraphic offices were opened during the year and none were closed. The control and administration of the system remained the same as outlined in my previous report. The system apparently entails no more duties on the officers in charge than they are able to perform, and very satisfactory results have been obtained.

Below is given a list of stations and distances, corrected to date:

	Intermediate.	Total.
LAND LINES.		
St. Michael-Valdez.		
	Miles.	*Miles.*
St. Michael	1	1
Golsova	42	43
Unalakleet	24	67
Old Woman	40	107
Kaltag	50	157
Nulato	37	194
Koyukuk	20	214
Louden	50	264
Melozi	29	293
Kokrines	37	330
Birches	38	368
Fort Gibbon	45	413
Rapids	36	449
Rampart	34	483
Eureka	28	511
Hot Springs	22	533
Tolovana	32	565
Minto	32	597
Nenana	28	625
Chena	37	662
Fairbanks	10	672
Salcha	32	704
Delta	27	731
Richardson	14	745
McCarty	23	768
Donnely	36	804
McCallum	36	840
Paxson	20	860
Hogan	29	889
Gulkana	30	919
Copper Center	25	944
Tonsina	22	966
Teikhell	24	990
Beaver Dam	16	1,006
Wortmans	22	1,028
Valdez	18.5	1,046.5
Nome-Fort Davis.		
Nome, city office	0	1,046.5
Nome, radio	.5	1,047
Fort Davis	4	1,051
Egbert-Boundary.		
Fort Egbert, radio	0	1,051
Fort Egbert	1	1,052
Boundary (no station)	12	1,064
Fairbanks, radio loop to main line south	.5	1,064.5

	Intermediate.	Total.
LAND LINES—continued.		
Gibbon-Nulato.		
	Miles.	*Miles.*
Gibbon radio loop to local office	0.25	1,064.75
Nulato radio loop to local office	.25	1,065
CABLES.		
Seattle-Seward.		
Seattle	0	0
Sitka	1,085	1,085
Valdez	596	1,681
Fort Liscum	4	1,685
Seward	195	1,880
Montague Island-Cordova		
Cape Whitshed	67	1,947
Sitka-Skagway.		
Sitka	0	1,947
Cape Fanshaw (no station)	211	2,158
Juneau	98	2,256
Haines	106	2,362
Skagway	18	2,380
Juneau-Douglas	3	2,383
Cape Fanshaw-Ketchikan.		
Cape Fanshaw (no station)	0	2,383
Wrangell	74	2,457
Ketchikan	112	2,569
Lawton-Worden.		
Fort Lawton	0	2,569
Fort Worden	40	2,609
Ward-Lawton.		
Fort Ward	0	2,609
Fort Lawton	12	2,621
Sitka-Japonski Island.		
Sitka	0	2,621
Japonski Island	.35	2,621
RADIO.		
Egbert-Circle	110	.....
Circle-Fairbanks	126	.....

	Intermediate.	Total.		Intermediate.	Total.
RADIO—continued.	*Miles.*	*Miles.*	RADIO—continued.	*Miles.*	*Miles.*
Egbert-Fairbanks	197		Gibbon-Nome	400	
Fairbanks-Gibbon	130		Gibbon-Nulato	181	
Gibbon-St. Michael	330		Gibbon-Circle	232	
Nome-St. Michael	127		Gibbon-Egbert	320	
St. Michael-Kotlik	52		St. Michael-Nulato	150	
Kotlik-Nome	139		Nome-Nulato	220	
Petersburg-Wrangell	30		Nome-St. Paul Island (naval)	558	
Fairbanks-Nulato	305				

RECAPITULATION.

	Miles.
Land lines	1,064.5
Cables	2,621
Total	3,686

Radio stations, 10.

EXTENSIONS AND BETTERMENTS.

During the fiscal year general repair parties were in the field on all four sections of the Washington-Alaska military cable and telegraph system, and at the end of the year the lines were perhaps in the best condition they have been in since the completion of the system.

The extensive rebuilding and betterment work on the third section continued and will be pushed along until completed. This work has been carried on under difficulties attendant on the lack of suitable transportation facilities. This difficulty, however, has been overcome, as two gasoline launches of suitable character have been furnished by the Quartermaster Department for the use of Signal Corps repair parties.

In view of the cost of maintenance of the line from Fort Egbert to Hot Springs via Rapids, Rampart, and Eureka (formerly Glen), and the small receipts taken in by these stations, it has been suggested that the line be rebuilt on the old right of way along the Tanana River from Hot Springs to Fort Gibbon direct, and it is hoped to complete this work before the severe winter season makes further construction work impracticable. The sum of $8,500 has been allotted for the rebuilding of this line. An allotment of $6,000 has been made for the reconstruction of that portion of the line from St. Michael to Kaltag, and this work will add greatly to the permanency of the line.

All buildings used by the Signal Corps in Alaska, with the exception of those at Sitka, Valdez, and Seward, and the radio buildings at Egbert, Fairbanks, Circle, Nome, and Gibbon have been turned over to the Quartermaster Department, which department will hereafter be charged with their maintenance.

War Department orders were issued during the year covering an enlargement of the reservation at Nulato.

CABLE SYSTEM.

During the year the Alaskan cable system has rendered most excellent service in the transmission of an immense amount of cable matter, official and commercial.

One hundred and fifty miles of "deep-sea" type and 30 miles of "intermediate" type of cable have been purchased, with a view to replacing that portion of the cable between Seattle and Sitka which has shown signs of deterioration.

RADIO.

The Signal Corps radio stations in Alaska have rendered excellent service in maintaining communication when interruptions have rendered the land-line system inoperative in any section.

During the year new 10-kilowatt sets of the latest quenched-spark type have been installed at Nome and Gibbon and a new station installed at Nulato, the equipment at the latter point being the 10-kilowatt set formerly used at Nome.

The installation of the new apparatus at Nome and Gibbon, together with the additional station at Nulato, completes a chain of radio stations across Alaska from the Canadian boundary to Norton Sound, which can be depended on to maintain communication when accidents interrupt communication on land lines.

The supply of qualified radio operators to maintain these stations in a high state of efficiency has been a very vexatious problem.

Due to breakage of machinery and equipment, several interruptions of radio communication have occurred, but the aggregate of these interruptions has amounted to but 1 day 22 hours and 45 minutes on the entire system.

The 1-kilowatt station at Kotlik, at the mouth of the Yukon River, was closed at the end of the summer season, October 4, and reopened for business April 20, 1912.

Detailed statement of expenditures under Army appropriation act approved Mar. 23, 1910.

Appropriation		$75,000.00
1. For all radiotelegraph installations	$27,477.83	
2. Rebuilding and betterments to the military telegraph line between Nome and Paxson	21,451.82	
3. Rebuilding and betterments to the military telegraph lines between Valdez and Paxson, Gulkana and Fort Egbert	3,512.12	
4. Extensions and betterments to the Alaskan cable system	22,558.23	
Total expenditures		75,000.00

Detailed statement of expenditures under Army appropriation act approved Mar. 3, 1911.

Appropriation		$125,000.00
1. For all radiotelegraph installations	$14,881.50	
2. Rebuilding and betterments to the military telegraph line between Nome and Paxson	808.27	
3. Rebuilding and betterments to the military telegraph lines between Valdez and Paxson, Gulkana and Fort Egbert	613.12	
4. Extensions and betterments to the Alaskan cable system	67,726.07	
Total expenditures		84,028.96
Unexpended balance		40,971.04

The Army appropriation act approved August 24, 1912, provides that, of the receipts of the Washington-Alaska military cable and telegraph system that have been covered into the Treasury of the United States, the sum of $50,000 is appropriated until the close of the fiscal year 1914 for defraying the cost of such extensions and betterments of the system as may be approved by the Secretary of War.

TELEGRAPH RESERVATIONS.

During the fiscal year the following Executive orders pertaining to telegraph reservations in Alaska were issued:

Executive order dated October 24, 1911.

It is hereby ordered that the military reservation established at Nulato, Alaska, approximately in latitude 64° 42′ N., and longitude 158° W., as reserved by Executive order dated May 4, 1908 (G. O. No. 90, War Department, May 23, 1908), be, and the same hereby is, enlarged so as to reserve from sale or other disposition, subject to private rights, if any there be, and set apart as a military reservation for the use of the Signal Corps, United States Army, in the matter of the maintenance of telegraphic communication in Alaska, all lands and those only included within metes and bounds described as follows:

Beginning at corner No. 1, marked by an iron-pipe monument about 2½ inches in diameter, being centered by a tack by means of a wooden plug, and placed at the intersection of the east line of the St. Peter Claver Mission and the bank of the Yukon River; thence N. 25° 30′ W. 1,780 feet, following the east boundary line of the said mission to corner No. 2, marked by a monument of the same description as said monument at corner No. 1; thence N. 64° 30′ E. 970 feet to corner No. 3, marked by a monument of the same description as said monument at corner No. 1; thence S. 25° 30′ E. 1,340 feet to corner No. 4, marked with a monument of the same description as said monument at corner No. 1; thence S. 64° 30′ W. 850 feet to corner No. 5, marked with a monument of the same description as said monument at corner No. 1; thence S. 25° 30′ E. 450 feet to corner No. 6, marked with a monument of the same description as said monument at corner No. 1; thence S. 64° 30′ W. 108 feet, following the meanderings of the bank of the Yukon River to corner No. 1, the point of beginning; containing an area of 30.7 acres, more or less. All courses are referred to the true meridian.

This reservation as herein made includes the whole reservation of Nulato, declared by said Executive order of May 4, 1908, as staked on the ground, the bearings of the several boundaries being erroneously described in said Executive order. (G. O. 115, W. D., 1911.)

Executive order dated November 23, 1911.

Under authority of the act of Congress approved July 5, 1884, entitled "An act to provide for the disposal of abandoned and useless military reservations" (23 Stat. L., 103), that portion of the right of way for military telegraph lines in Alaska reserved by Executive order dated May 24, 1905 (G. O. No. 83, War Department, June 5, 1905), which is located between Hot Springs and Fort Gibbon, Alaska, is hereby placed under the control of the Secretary of the Interior for disposition under said act of Congress, or as may be otherwise provided by law. (G. O. 163, W. D., 1911.)

CONDITION OF ENLISTED MEN.

The enlisted men of the Signal Corps on duty in connection with the operation of the system during the fiscal year have performed their duties in a satisfactory manner. Although more than $250,000 in telegraphic funds were handled during the year, there were no losses by the Signal Corps men accounting for this large sum of money.

There were 5 deaths among the men—4 from disease and 1 from drowning.

The average number of infantrymen detailed for duty with the Signal Corps in Alaska as line and repair men and with construction and reconstruction parties was 28, a reduction of 18 over the preceding year.

PHILIPPINE ISLANDS.

During the year 5 officers and 155 enlisted men of the Signal Corps were engaged in the operations of the Signal Corps in the Philippine Islands.

In addition to maintaining the military telegraph and telephone lines, the Signal Corps cared for and operated telephone systems at Camp Eldridge, Camp Gregg, Camp John Hay, Camp McGrath, Camp Stotsenburg, Fort William McKinley, Regan Barracks, Fort Mills, Fort Wint, Warwick Barracks, Camp Downes, Camp Connell, Augur Barracks, Camp Keithley, Camp Overton, Ludlow Barracks, Pettit Barracks, and Torrey Barracks.

The work performed in connection with fire-control installations at seacoast defenses in the Philippines is described on page 17.

Radiotelegraph stations were maintained and operators furnished at Manila (improvised 1 k. w.), Corregidor Island (10 k. w.), Grande Island (1 k. w.), Carabao Island (⅛ k. w. pack set), El Fraile Island (⅛ k. w. pack set), Caballo Island (⅛ k. w. pack set), Fort William McKinley (¾ k. w. wagon set), and Iloilo (⅛ k. w. pack set).

Operators were also furnished and stations installed for the interisland transports *Warren*, *Liscum*, and *Merritt*.

The enlisted strength of the corps in the Philippines at the end of the fiscal year aggregated 155 men. Thirty-four have been discharged—29 by expiration of term of service, 1 to accept a civil position with the Government of the Philippine Islands, 1 on surgeon's certificate of disability, and 3 by general court-martial. Six were transferred to the line of the Army, 68 were returned to the United States (57 for duty and 11 for discharge). Twenty-eight men reenlisted for the corps. Twenty-three were obtained by transfer from the line and 58 by transfer from the United States. In addition to the foregoing, 1 man of the Signal Corps was on duty with the American forces at Tientsin, China.

The enlisted personnel on duty in the Philippines is organized into two companies—one a skeleton or base line company, from which is drawn the men on detached service and special duty, the other a field company.

UNITED STATES.

The operations of the Signal Corps in the United States during the year covered the management of military telegraph lines, the establishment of post telephone systems, the supplying of signal equipment to the Army and the Organized Militia, the installation of fire-control systems for coast defense, military aeronautics, the provision of fire-control systems for Field Artillery, enlisting and training of recruits in visual, electrical, and telephone matters, electrical and other experimental work, and active and suitable training in preparing the corps for war or other emergency.

SIGNAL CORPS POSTS.

Schools for the instruction and training of enlisted men of the Signal Corps were conducted at Fort Omaha, Nebr., and Fort Wood, N. Y. Signal Corps companies A, B, and H garrisoned Fort Omaha and Company G Fort Wood.

The course of instruction for enlisted men embraces the following subjects: Visual signaling, fundamental principles of electricity, telephony, telegraphy, radiotelegraphy, line construction work, and special instruction in telegraphic accounts and property accountability to prepare men for assignment to duty in Alaska.

GENERAL DEPOTS OF SUPPLY.

The three general supply depots of the Signal Corps located in the United States, at Fort Wood, N. Y., Fort Omaha, Nebr., and Fort Mason, Cal., have successfully met the demands made upon them in connection with the supply of equipment and material to the various posts and organizations in this country. Equipment and material pertaining to the general signal service of the Army are kept in each depot. Equipment for the installation and maintenance of the fire-control installations of the seacoast fortifications are stored at the depots at Fort Wood and Fort Mason.

Complete reserve equipments for field and telegraph companies, one each at Fort Wood, Fort Omaha, and Fort Mason, have been held intact throughout the year, no occasion for their use having arisen. These equipments are complete with the exception of certain articles which deteriorate if held in storage, but these are available for immediate issue.

The card record of available stock at depots formerly maintained for the sole purpose of enabling the Chief Signal Officer to determine at all times exactly what is available in the depots was, beginning April 1, 1912, incorporated in a scheme for accounting for all material held in the depots. Four classes of stock are recognized: Fire control, signal service, depot equipment, and war reserve, changes in the records being made only in accordance with transactions shown on daily report cards submitted by each depot, all such transactions being supported by proper voucher.

THE ARMY SIGNAL SCHOOL.

The Army Signal School, located at Fort Leavenworth, Kans., has completed another very successful year's work. Established for the purpose of completing the technical training of officers of the regular corps and line officers with a view to their detail in the Signal Corps, it has this year practically completed the first of the objects for which it was established. Beginning with 1905 and including the class of this year, 68 officers of the Infantry, Cavalry, and Field Artillery have completed the course. A very large proportion of these have been detailed in the Signal Corps, and at present 21 out of the 26 officers now serving details are graduates of the school.

In general, the objects of the school have been stated to be the training of officers, the dissemination of knowledge in the Army concerning the work of the Signal Corps, and researches looking to the improvement of the material of the Signal Corps. The trained

staff of the school and the very complete laboratory equipment have enabled the last-named feature to be made especially effective in the past year. In addition to the scheduled work the officers of the Signal School have done much special work of great value to the Signal Corps.

The past year has witnessed the introduction into the course of lectures on the subject of organization, marches, combat, and staff administration and supply by the assistant commandant of the Army service schools.

A number of changes have been introduced in the method of instruction which tend toward making the course more immediately applicable to the needs of the service. At present the instruction is conducted under three departments, namely, languages, topography, and signal engineering. The last-named instruction, conducted by the director of the Army Signal School with two assistants, includes theoretical and practical electricity, oil engines, visual signaling, photography, and Signal Corps Manuals Nos. 2, 3, 6, 7, and 8. In the laboratory, after a brief course in electrical measurements, student officers are each assigned special subjects, and are made members of various committees for investigation and report on matters of interest to the Signal Corps. In the spring about six weeks are devoted to outdoor work, in which are studied the application of Signal Corps apparatus to practical work in the field. Instruction in aeronautics included a very useful and interesting visit to Fort Omaha, Nebr., where practical experience in the manufacture of hydrogen gas, inflation of balloons, and free ascensions was given to the class.

Owing to its great and increasing importance in the Signal Corps much time is devoted to instruction in radiotelegraphy. The officers are given a thorough theoretical and laboratory course, and, in addition, much use is made of the field and station radio apparatus. The possession of a well-equipped 3-kilowatt radio station, which communicates with Forts Omaha and Riley regularly and occasionally with more distant stations, furnished valuable means for instruction.

In allotment of time at the school 160 half days were given up to theoretical work and 144 half days to practical work. The method of instruction in the class rooms is a combination of the conference and quiz methods. This is supplemented with problems and lectures.

The semimonthly technical conferences, which have been so successful a means in former years of keeping the school in close touch with the Signal Corps of the Army and the National Guard, have continued their useful work of former years. The contributions made by the student officers and some others outside the school interested in Signal Corps work have been published and distributed regularly to officers of the Signal Corps of the Army, and of the National Guard, and to others who have indicated their interest in the school.

FIELD ARTILLERY FIRE-CONTROL EQUIPMENT.

The equipment developed for the fire-control systems of the Field Artillery is, in general, giving satisfaction. Some difficulty has been experienced with the twin-conductor cable issued to battalions and regiments due to the wearing away of the insulation of the conductors. This matter has been taken up by the Signal Corps and it is believed that a suitable insulation will soon be available.

A new type of twin-conductor cable for mountain Artillery regiments has been experimented with during the year, and a satisfactory cable adopted.

A new buzzer connector, type C, has been developed for use on the cable lines of the mountain Artillery regiments. These connectors will be issued when the proper pack reels are issued by the Ordnance Department.

A new galvanized-iron carrying case for the acetylene lantern has been issued to replace the wooden case in which this article of equipment was formerly carried in the signal chest of the Feld Artillery wire cart.

During the year a new field glass, known as the type E glass, was adopted for issue to Field Artillery organizations to supersede the type B glass formerly issued.

CABLE SHIPS.

The Signal Corps operates three cable ships, the *Burnside*, the *Joseph Henry*, and the *Cyrus W. Field*, which were actively engaged in laying and repairing submarine cables during the past fiscal year. The cable ship *Burnside* operates on the Pacific coast, and is intended primarily to maintain the Washington-Alaska cable system, but is also used to install and maintain fire-control cables on the western coast of the United States.

The cable ships *Joseph Henry* and *Cyrus W. Field* are used on the Atlantic coast to install and maintain submarine cables forming parts of the fire-control installations of the different Coast Artillery districts protecting the ports on the Atlantic Ocean.

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SIGNAL CORPS OF THE ORGANIZED MILITIA.

Field company equipment has been issued to the States of Ohio, New Jersey, Pennsylvania, Washington, Illinois, California, Massachusetts, Indiana, and Utah.

The new type H wire cart was supplied to the States of Vermont, Tennessee, Virginia, California, New Jersey, Massachusetts, Pennsylvania, and the District of Columbia. It is anticipated that a decided increase in interest and zeal will result in connection with their Signal Corps field work.

During the year complete battery equipment for Field Artillery organizations was issued to the following States: Connecticut, Colorado, Illinois, Indiana, Louisiana, Massachusetts, Michigan, New Jersey, New Mexico, New York, Vermont, and Virginia.

Requisitions were received during the year for fire-control equipment for the armories of the militia Coast Artillery companies at San Francisco, San Diego, and Savannah. Equipment for San Francisco and San Diego has been shipped; that for Savannah has been assembled in the depot and is being held awaiting shipping instructions.

A full equipment of signaling flags for Infantry companies in accordance with paragraph 45, Infantry Drill Regulations, has been furnished all Infantry organizations of the militia.

MILITARY TELEGRAPH LINES.

Military telegraph lines in the United States have been reduced to almost nothing, as shown by the small total receipts handled. "This line" receipts, amounting to $618.85, were collected and deposited to the credit of the Treasurer. "Other line" receipts, amounting to $1,683.40, were turned over to commercial companies. These figures do not take into account money collected and turned over to commercial companies at offices where the Signal Corps operator collects no "this line" receipts, of which there are about 60.

Permission has been granted the Agricultural Department to use the military telegraph line from Holbrook to Fort Apache in connection with the fire-warning service maintained by the forest-ranger service of that department. The forest rangers have agreed to keep in repair that part of the line from Holbrook to the northern boundary of the White Mountain Indian Reservation.

A new telegraph loop was completed at Fort Bliss, Tex., during the year.

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NEW SIGNAL CODE.

Owing to the increasing growth of radiotelegraphy and the necessity for the use of the international Morse code and, further, to avoid multiplicity of signal codes in the Army and for better communication with the Navy, it was decided during the past year to make the international Morse code the general-service code of the Army. The use of the Myer code of signals, prescribed in General Orders, No. 32, Headquarters of the Army, 1896, has been discontinued and the international Morse code, announced by circular No. 7, War Department, Office of the Chief Signal Officer of the Army, as the general-service code of the Army to be hereafter used for all visual and aural signals, except as modified in certain details. Furthermore, after conference with the Navy, it was agreed that—

For signal communication between the Army and the Navy the international Morse code shall be adopted, transmitted by radio, visual, and sound signals whenever applicable to the means of communication employed, with the single modification that in the use of the Ardois night system numerals shall be spelled out and punctuation marks shall be eliminated.

The use of the international Morse code, however, shall not be understood as prohibiting the employment between the Army and the Navy of such other systems of signaling as may be useful under special conditions, such as the international code, the two-arm semaphore system, pyrotechnics of any description, including rockets, the Very pistol, or any other method of communication not adapted to the dot-and-dash code but which at times may become serviceable and which may be temporarily agreed to by the senior officers present of the two services.

The new signal book for the Army is now in the hands of the printer. It is believed that the adoption of this new general service code will encourage signal communication between the Army and the Navy and will be of great advantage to the forces, both regular and militia, and the National Guard.

The change is not intended, however, to abolish the use of the American Morse code, which will be continued on telegraph lines, field lines, and short cables.

SIGNAL CORPS MANUALS.

The manuscripts of revised editions of Signal Corps Manuals Nos. 7 and 8 were prepared during the year, and it is anticipated that the former will be ready for issue by the 1st of November.

Signal Corps Manual No. 2 was reissued during this year and embodies necessary regulations for the government of radio stations, which have become a most important and necessary part of the Alaskan system. The regulations are based on the rules adopted by the International Radiotelegraph Conference, and extracts relative to the handling of messages between ship and shore stations have been incorporated.

ENLISTED MEN.

The enlisted force, which aggregated 1,212 on June 30, 1912, has experienced the following changes: Enlisted and reenlisted, 410, of whom 237 were recruits; deserted, 49, being 4 per cent of the total force; died, 6, 0.5 per cent; discharged for disability, 18, 1.5 per cent; discharged by purchase, 73, 6 per cent.

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LABORATORY.

During the year the usefulness of the Signal Corps laboratory at Washington has again been demonstrated. Concerning the experimental work performed, attention is invited to the development of the following equipment: Quenched spark radio pack set for signal work, service buzzer, buzzer connector and twin conductor cable for mountain artillery organizations, time-interval mechanism for coast artillery fire-control stations, and apparatus for testing field glasses.

New types of flags were developed for issue to Infantry companies, although the data for the design was prescribed by the General Staff of the Army.

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FIELD COMPANIES OF THE SIGNAL CORPS.

The field companies of the Signal Corps are organized under the provisions of General Orders, No. 24, War Department, February 17, 1911, and are as follows: A, Fort Omaha, Nebr.; D, Army Service Schools, Fort Leavenworth, Kans.; E, Presidio of San Francisco, Cal.; I, Fort D. A. Russell, Wyo.; and L, Fort William McKinley, P. I.

During the year these companies were engaged in drilling and training their personnel and testing and developing their equipment. For this purpose various practice marches were made. Field Company A was at Fort Omaha during the entire year; Field Company D was on duty with the Maneuver Division, San Antonio, Tex., until July 12, 1911; and in June, 1912, was used in connection with problems of the Army Signal School in the instruction of students; Field Company E participated in the maneuvers held at the Presidio of San Francisco in April in connection with the inspection of that post, and during May and June the radio section of this company marched approximately 50 miles a week testing the radio equipment of the company; Field Company I was on duty with the Maneuver Division in Texas until November 9, 1911, and during this period maintained

communication between the camp at Fort Sam Houston and the department commander, staff departments and troops encamped at Leon Springs, Tex.; Field Company L participated in the field exercises and maneuvers held in the Philippine Islands in February, and the radio section of this company assisted in testing the radio station at Corregidor.

During the year the equipment of these companies was prescribed and now forms a standard unit equipment. Each company is completely provided with this equipment and is ready for immediate field service. A new steel wire cart, known as the type H wire cart, has been issued to the service. The development of an ideal wire cart built to carry and lay a suitable supply of field wire, and at the same time be capable of transporting the equipment of one wire section of a field company, is one of the most difficult tasks before the Signal Corps. The present type H cart represents the ideas and recommendations of many officers during a period of five years. Minor defects have developed in the vehicle, which are being corrected.

RADIOTELEGRAPHY.

Fort Mills, Corregidor Island, Philippine Islands.—The 10-kilowatt radio station at this post, commenced during the preceding fiscal year, was completed. Exceptionally good results are now being obtained with this station, which is transmitting messages 2,000 miles over sea and half that distance over land.

Fort Sam Houston, Tex.—A new 10-kilowatt radio station was installed and put in operation at this post. A special structure was built for this equipment and two 200-foot towers provided to support a T antenna, used for radiating energy. This station was constructed to provide communication along the Mexican border and with Army radio stations to the north. It is now in successful operation, using commercial energy purchased from a local power company as its source of primary power. If experience indicates the necessity therefor, a power reserve will be furnished.

Alaska.—New 10-kilowatt radio stations were installed at Nome and Fort Gibbon to replace the original equipment installed some years ago at these stations, and which did not represent the best development in the wireless art. The existing 200-foot towers were used to support new umbrella-type antenna, which were provided, and the duplicate power equipment was replaced with new material.

A 10-kilowatt radio sation was installed at Nulato, Alaska, which is located practically midway between the two above-named stations, by using the best of the equipment displaced at Nome and Fort Gibbon. A 200-foot tower was erected and an umbrella antenna and counterpoise system erected. The station is giving exceptionally good service, considering the age and type of equipment in use.

The radio communicating system in Alaska is now in better operating condition than ever before. The stations at Fort Egbert, Circle, and Fairbanks were carefully inspected and repaired.

Artillery district of San Francisco.—The radio station forming part of the district signal station in this district, a 2 kilowatt installation, was completed and is now in operation.

Artillery district of southern New York.—A 1 kilowatt radio set was installed in this district at Fort Hancock to replace the equip-

ment originally installed some years ago, and constructed by the Signal Corps. A similar set was installed on the cable boat *Cyrus W. Field* to conform to existing requirements covering passenger carrying vessels.

Artillery district of Honolulu.—A 2 kilowatt radio set was installed at Fort Ruger, Hawaii, in the signal station in that district. Two 185-foot wooden masts were provided to support the T antenna. Duplicate power equipment, to enable the station to be operated from either commercial or post power, was provided.

Transports "Meade" and "McClellan."—One-kilowatt sets were temporarily installed on the United States Army transports *Meade* and *McClellan* in anticipation of their probable emergency use by the Army. These stations will be equipped hereafter with permanent sets, the present equipment being transferred to artillery district signal stations, for which they were originally intended.

All of the radio stations installed during the fiscal year represent the highest type of radio equipment, and embody the high-frequency, quenched-spark features.

A radio pack set was devised and designed in the Signal Corps laboratories for field purposes. This set embodies all of the latest features of the radio art, such as high frequency, quenched spark transmitting circuit, a compact and flexible receiving set of many advantages for its size. In addition, a new type of man-driven, high-frequency, alternating-current generator, provided with the necessary gearing and stand. This pack set was found very satisfactory, and 52 are being assembled in the Signal Corps shops and laboratories.

A radio transmitting set for aeroplane use was devised in the Signal Corps laboratories and successfully tried out on an aeroplane in flight. This set will be developed and a number of them constructed.

Radio stations installed by the Signal Corps.

Name of station.	Call letter.	Power (kilowatts).	Whether open to public service.
UNITED STATES.			
Fort Andrews, Mass.	FC	1	Not open to public service.
Fort H. G. Wright, N. Y.	FW	1	Do.
Fort Hancock, N. J.	FN	1	Do.
Fort Leavenworth, Kans.	FL	3	Do.
Fort Lefett, Me.	FV	1	Do.
Fort Monroe, Va.	FO	1	Do.
Fort Omaha, Nebr.	FS	3	Do.
Presidio of San Francisco, Cal.	PS	1	Do.
Fort Riley, Kans.	FZ	3	Do.
Fort Totten, N. Y.	FT	¾	Do.
Fort Wood, N. Y.	FD	3	Do.
Fort Worden, Wash.	FX	1	Do.
Signal Corps Laboratory, Washington, D. C.	SC	3	Experimental.
Fort Stevens, Oreg.	FJ	1	Not open to public service.
Bureau of Standards, Washington, D. C.	BS	2	Experimental.
Fort Sam Houston, Tex.	SA	10	Not open to public service.
Coast Artillery School, Fort Monroe, Va.	CAS	2	Do.
PHILIPPINE ISLANDS.			
Corregidor Island	FH	10	Not open to public service.
Fort Drum	PIB	½	Do.
Fort Frank	PIA	½	Do.
Manila	PN	1	Do.
Fort William McKinley	PID	¾	Do.
Fort Wint	PIC	1	Do.

Radio stations installed by the Signal Corps—Continued.

Name of station.	Call letter.	Power (kilowatts).	Whether open to public service.
UNITED STATES ARMY TRANSPORT SERVICE.			
Merritt	FDR	2	Open to public service.
Buford	FDB	2	Do.
Crook	FDC	2	Do.
Dix	FDX	2	Do.
Kilpatrick	FDK	2	Do.
Liscum	FDL	2	Do.
Logan	FDG	3	Do.
Sheridan	FDS	3	Do.
Sherman	FDH	3	Do.
Sumner	FDN	3	Do.
Thomas	FDT	3	Do.
Warren	FDW	2	Do.
Cable ship Burnside	BS	3	Not open to public service.
Cable ship Joseph Henry	FR	2	Do.
Cable ship Cyrus W. Field	FA	1	Do.
Meade	FDE	1	Open to public service (temporary).
McClellan	FDM	1	Do.
ARTILLERY HARBOR TUGS.			
Captain Charles W. Rowell	RW	½	Not open to public service.
Reno	X	½	Do.
General A. M. Randol	OR	½	Do.
General R. B. Ayers	FY	½	Do.
General Harvey Brown	HB	½	Do.
James Fornance	ASF	½	Do.
General Robert Anderson	ADN	½	Do.

INTERNATIONAL CONTROL OF RADIOTELEGRAPHY.

On May 25, 1912, the Senate confirmed the adherence of the United States to the Berlin treaty of 1906. The official standing of the United States in the International Bureau of Radiotelegraphy thus having been assured, steps were immediately taken to have delegates appointed to the International Conference on Radiotelegraphy opening in London on June 4, 1912.

In addition to nine delegates from various other departments of the Government, three delegates, officers of the Signal Corps, were designated to represent the War Department. This entire delegation participated in the sittings of this conference, terminating July 5, and signed the treaty on the part of their Government.

Exclusive of certain colonies and protectorates, 30 other countries were represented at the conference. As a result of the deliberations of this conference, certain changes and additions which seemed desirable on account of the evidence of radiotelegraphy since 1906 were adopted. There appeared to be a universal demand to make extensive additions to the rules governing its humantarian applications in the saving of life at sea involving the provision of efficient apparatus, greater power, reserve sets, and continuous attendance by operators on ships of the first class. Stringent regulations were adopted concerning priority of all signals of distress and messages relating thereto.

The doctrine of free interchange of communication between ships and coast stations, independent of the system of radio appliances used, which was adopted in the Berlin conference, was accepted and reaffirmed in the London conference.

Every maritime country was requested to establish coast stations with efficient and permanent service.

Important provisions concerning the transmission of meteorological data and time signals were made.

The ship's normal wave length was increased from 300 to 600 meters, an advance that was required on account of the growing size of the ship's installations.

The conference thought best not to impose too severe technical restrictions beyond those clearly demonstrated as necessary to prevent interference. The amount of power which could be used and the sharpness of tuning imposed were within safe lines to permit experiment and development of different systems.

The work of the International Bureau of Radiotelegraphy since 1906 was approved and its scope considerably extended.

A tentative invitation to hold the next conference at Washington, D. C., was extended to the London conference before adjournment. Congress will be asked to make a special appropriation for the purpose of providing for the expenses of such conference and for the due entertainment of the delegates.

The work of this international conference having been carried to such a satisfactory conclusion, it is to be hoped that the Senate will speedily confirm the treaty made in London, which extends and brings up to the latest modern standards the provisions of the Berlin treaty of 1906.

NATIONAL CONTROL OF RADIOTELEGRAPHY.

The act of Congress approved June 24, 1910, requiring operators for radio communication on certain ocean steamers, which went into effect July 1, 1911, has been amended by an act of Congress approved July 23, 1912, which in general terms extended the general requirements already made on ocean-going vessels as to the number of operators required and also the provision of auxiliary apparatus and other important points.

On August 13, 1912, "An act to regulate radio communication" was passed, in which this country has taken an advanced stand among the nations of the world in the general regulation of radiotelegraphy. In this act the wave lengths and the tuning are specified and rigorous restrictions imposed to prevent interference with distress signals which are given absolute priority in all cases. The power to be used by ship and shore stations and restrictions regarding intercommunication are also dealt with. One of the most important provisions is that all private stations are brought under Government control and must be licensed and duly inspected by the Government. In this way it is hoped that the annoying interference which has so greatly hampered governmental and proper commercial use of radiotelegraphy may in future be prevented.

MILITARY AERONAUTICS.

BALLOONS.

The Signal Corps maintains at Fort Omaha, Nebr., in constant readiness for use, buildings and equipment for handling free and captive balloons. The plant for generating hydrogen employs the electrolytic method. It has the advantage of always being ready to make gas on a few moments' notice. The plant also includes machinery for compressing hydrogen into steel cylinders for use elsewhere. Each year for several years the officers of the Army signal

school at Fort Leavenworth, Kans., have been sent to Fort Omaha, Nebr., for several days' practical instruction in ballooning as part of their course in aeronautics. On several occasions the Weather Bureau has used the facilities at Fort Omaha for exploring the upper atmosphere by means of sounding balloons sent up from that station. At the present time three officers of the Army hold balloon pilot licenses from the International Aeronautic Federation.

The small dirigible balloon purchased about four years ago has deteriorated to such an extent that it is not worth the cost of rebuilding and general repairs necessary to place it in service. It has served its purpose for the instruction of officers, and always was known to be entirely too small for practical use in field service. The few dirigible balloons which were used some years ago in this country for exhibition and amusement purposes have been displaced almost entirely by the aeroplane. It does not appear that there are any commercial firms in the United States manufacturing dirigible balloons of a sufficient size for military purposes. In Europe dirigibles have not been displaced by aeroplanes, and their constant improvement has resulted in surprising records for speed, altitude, and duration, which will be mentioned further on in this report. These airships are very costly to construct and operate. Their value for strategical reconnoissance can not be doubted, but it is impossible for the American Army to undertake anything in this direction until such time as Congress is prepared to furnish adequate funds and personnel for the aeronautical service. A recent quotation for one of the most successful types of German dirigibles, including hangar, gas-making and compression equipment, amounted to $650,000.

AVIATION.

A special report from the Secretary of War in response to resolution 448, House of Representatives, March 26, 1912, proposed a plan for the development of the aviation service, including that for coast defense and foreign possessions, which will require several years for completion. Much time will be required for the training of officers and enlisted men after funds are provided by Congress. This report, which was published as House Document No. 718, Sixty-second Congress, second session, contains an account of the world's records in aeronautics and also the progress and equipment of foreign armies up to April, 1912. Since that time many of the records stated have been exceeded. These will be mentioned together with important notes concerning progress in Europe.

The world's present records for aeroplanes are as follows: Duration, 13 hours 17 minutes, without landing, made by Fourney, September 11, 1912, his distance being 637 miles; the altitude record is held by Legagneux, 18,537 feet, made September 17, 1912; the best speed around a closed measured course is 109 miles per hour, made by Vedrines at Chicago September 9, 1912.

The best dirigible balloon record was made October 15, 1912, by a German naval dirigible of the Zeppelin type. It carried 21 passengers about 31 hours without landing. The French dirigible *Conte* holds the altitude record of 10,007 feet.

A notable cross-country flight of 570 miles from Valenciennes, near the Belgium border, to Biarritz was made in one day recently

by Pierre Dancourt, French aviator. He made three stops en route for fuel and oil.

Various reports indicate that the aviation service in European countries has reached the following surprising proportions:

England.—The Royal Flying Corps has been organized, coordinating the aviation service in both the Army and Navy. The budget for 1911–12 shows a total of $1,540,000 for aeroplanes, buildings, flying fields, etc. Thirty officers have already been trained and instruction of others is in progress to complete seven aviation squadrons, with a total of 160 machines.

France.—The aeronautical budgets in France have increased rapidly in the past four years, as follows: 1910, $48,000; 1911, $400,000; 1912, $1,024,000; 1913, $7,593,000. There are about 260 French Army officers who are pilots and 630 aeroplanes. It is reported that it is the intention to organize an aviation regiment of 1,000 aeroplanes. At this time about 1,200 pilots have been licensed in France, including officers and civilians. In the United States 178 have been so licensed.

The first review ever held of a complete aeroplane armada took place at Villacoublay, France, September 27, 1912. Seventy-two Army aeroplanes were present with their full complements of pilots and observers and the attached motor trucks bearing supplies. These passed in review before the French minister of war, M. Millerand. The airmen and their machines had just returned from the grand army maneuvers, at which they achieved many triumphs. At the close of the review M. Millerand made a speech in which he dwelt upon the determination of the Nation to keep France in the forefront of aviation. At the conclusion of the review, 20 aeroplanes rose as in a flock, hovered for a few moments over the parade grounds, and then sped off eastward to resume their stations on the German frontier. The remainder of the armada scattered during the afternoon to various military posts.

Germany.—The appropriation for the fiscal year ending March 31, 1913, is at least $1,000,000. About 120 aeroplanes were in possession of the Army in May, 1912. Several flying schools have been acquired for the training of officers. The German Government owns 9 large dirigible balloons, and there are also 13 dirigibles owned by companies or individuals which would be placed at the service of the Government in case of war. Popular subscriptions are being collected in Germany for the purchase of aeroplanes for Government use with as much enthusiasm as in France.

Russia.—This country is next to France in the development of an aerial fleet. The supplementary estimates for 1912 include an item of $900,000 for the purchase of air craft. It is reported that the present plans contemplate the construction of 150 monoplanes and 8 biplanes. Ten of the monoplanes will be ordered abroad and the remainder manufactured in Russia. Twenty of these machines will be assigned to the aviation school for the training of officers, and the remaining machines are to be formed into 6 squadrons located in the various military districts. Popular subscriptions in Russia for an aerial fleet have amounted to $24,000; besides this, $119,200 has been allotted by the Government from a special fund on hand. These amounts are in addition to the regular budget. The personnel of the aviation schools at present is reported to consist of 102 officers,

200 soldiers, and 55 machines. At the end of the year it is expected that about 100 officers will have received their pilot certificate.

Italy.—Appropriations for 1911 amounted to $2,000,000. In March, 1912, the Italian Army had 12 aeroplanes in service with the troops operating in Tripoli. These aeroplanes rendered most excellent service, some reconnaissance flights being as much as 140 miles over the enemy's country. On account of the strong winds, the operation of aeroplanes was always attended by considerable difficulty. In Italy selected officers are trained at the aviation centers; 70 have been trained recently, and of these 30 have passed the second test for military pilot.

United States.—The Signal Corps Aviation School at College Park, Md., during the year conducted experiments with radiotelegraphy and photography from aeroplanes. These experiments are still in progress. An automatic machine gun was fired from an aeroplane on the College Park field, demonstrating the possibilities of aeroplanes for offensive warfare. This is the first case known of the use of a machine gun from heavier-than-air flying machines. Other experiments have been conducted there with various signaling systems and a device for dropping explosives. Later this device was taken to Europe, where it won first prize in the competition conducted by the French Army, the winning record being 12 out of 15 projectiles (15 pounds each) hitting a target 60 feet in diameter from an altitude of 656 feet; also 8 hits out of 15 on a target 125 by 375 feet from an altitude of 2,624 feet.

The Signal Corps established the first Army aviation school at College Park, Md., in June, 1911. The field was rented by the Quartermaster Corps, and temporary buildings were constructed for housing the aeroplanes. During the year ending June 30, 1912, 1,500 flights were made by the officer aviators. This number does not include the hops across the field by beginners. During the winter of 1911–12, the personnel and aeroplanes were moved from College Park to Augusta, Ga., for four months, in order to have a milder climate for instructing students.

Tests have been prescribed to determine qualifications for a rating known as military aviator, the requirements of which are as follows:

1. Attain an altitude of at least 2,500 feet, recorded by a suitable barograph.
2. Make a flight of at least five minutes' duration with the wind blowing at the rate of at least 15 miles per hour (indicated by an anemometer).
3. Carry a passenger to a height of at least 500 feet, and on landing come to rest within 150 feet of a previously designated point, the engine being completely cut off prior to touching the ground. The combined weight of passenger and pilot must be at least 250 pounds.
4. Execute a volplane from an altitude of at least 500 feet with the engine completely cut off, and cause the aeroplane to come to rest within 300 feet of a previously designated point on the ground.
5. Make a military reconnoissance flight of at least 20 miles for the purpose of observing and bringing back information concerning features of the ground or other matter which the candidate is instructed to report upon. This flight must be made at an average altitude of 1,500 feet.

At the present time five officers have qualified according to these requirements; three of them are now on duty with the aviation service, two having been relieved and are now on duty with their regiments.

The first aeroplanes purchased by the Army were necessarily of the commercial types available in the United States. These answered the purpose of exhibition flying and passenger carrying, for which

they were originally designed, but they lacked power, speed, and carrying capacity necessary for military purposes.

After experience with these commercial machines in the summer of 1911, specifications were issued setting forth the general requirements for military aeroplanes. Several American manufacturers were given an opportunity to construct machines according to these specifications. They were being delivered and were undergoing their official trials during the past summer. The American manufacturers did not have the facilities for promptly designing, experimenting with, and constructing new types. This necessarily delayed progress in Army aviation. However, aeroplanes are now being delivered which fulfill military requirements, and improvements will continue to be made in the future.

An increase in speed enables an aeroplane to fly better and with more safety in high winds or under gusty atmospheric conditions, but the increase in speed, while rendering the flight more safe in air, is quite the opposite in landing. Aeroplanes constructed for racing purposes are usually flown over a prepared aerodrome, but for military purposes they must fly across country and land in any open fields in case the motor stops. Therefore the military service can not use the present type of ultra-high-speed machines.

After careful consideration of these conflicting conditions and military needs, the Signal Corps decided upon two types of aeroplanes known as the scout and the speed scout. The general requirements for these two types are as follows: One type will be known as "speed-scout" aeroplane. This type is desired particularly for strategical reconnoissance, carrying only one aviator without passenger, and having a radius of operation of about 100 miles and a speed of not less than 65 miles per hour. With this type of aeroplane a military aviator is expected to locate and report large bodies of troops. This machine should be capable of ascending at the rate of about 600 feet per minute. The second type will be known as "scout" machine. It is desired for reconnoissance service when hostile armies are in contact or approaching contact. This service requires a weight-carrying aeroplane, the crew consisting of two aviators capable of relieving one another as observers. The aeroplane should be provided with radio equipment. This type of aeroplane should remain in the air at least three hours to permit the observers to locate smaller bodies of troops accurately upon a map, make sketches, military photographs, etc. The scout aeroplane should have a speed of not less than 45 miles per hour. It should be capable of carrying a useful weight of 450 pounds, and with this weight ascend at least 2,000 feet in 10 minutes. The chassis must be designed so that it is capable of landing on and arising from soft ground, such as harrowed fields.

Two aeroplanes from the College Park Aviation School were sent to Connecticut for participation in the maneuvers during the month of August, 1912. Unfortunately at that time the manufacturers had not yet delivered the military types of aeroplanes, which were ordered many months before, so that it was necessary to use old military machines, which had been in use for a long period as training machines. The results obtained by this very inferior equipment proved to be of considerable value, but they should not be accepted by the Army as any criterion for what may be expected of well-trained pilots and modern military aeroplanes.

At the present time all officers detailed to the aviation service must necessarily be detached from the regiment or branch of the service to which they belong, thereby further increasing the number of detached officers, to which so much objection is found. Requests for additional officers for aviation service naturally meet with considerable opposition, and those now attached to the Signal Corps for aviation duty have a very uncertain status and might be relieved at any time. This condition can only be remedied by legislation which will provide sufficient personnel for the Signal Corps, so that officers assigned to the aviation service may be regularly detailed with the Signal Corps, thereby creating vacancies in their arm of the service, which are filled in the usual manner.

The development of military aviation has not been without its proportion of fatalities. Four officers, one enlisted man, and one civilian have been killed in Army aeroplanes. One officer was relieved on account of injury received in flying. A bill has already passed the House of Representatives providing additional pay for officers who fly aeroplanes.

PRESENT AND FUTURE OF AVIATION.

There was appropriated by the act of March 3, 1911, for the purchase, maintenance, operation, and repair of aeroplanes and other aerial machines, $125,000.

The expenditures were:

For the purchase of aeroplanes, 15 machines[1]		$85,050.00
For spare engine and aeroplane parts:		
2 engines	$2,700.00	
Aeroplane parts	18,319.46	
		21,019.46
For services, machinist, laborers, repairs, etc		2,935.25
For miscellaneous purchases of accessories, such as special instruments, tent hangars, gasoline, oil, etc		15,910.09
Unexpended		85.20

Appropriated by the act of August 24, 1912, for the purchase, maintenance, operation, and repair of airships and other aerial machines, $100,000.

If the rate of maintenance should prove as high during the coming year as it did the past year, it is estimated that it will require from this appropriation, for maintenance, including services, spare parts consumed, gasoline, etc., $34,000.

For spare parts of aeroplanes and engines, to remain in stock, $6,000; leaving $60,000 for the purchase of new machines. Not to exceed 10 machines could be purchased with this amount, which makes possible 24 as the maximum number of machines which could be on hand July 1, 1913.

The plan proposed by the Secretary of War in his report to Congress, House Document No. 718, Sixty-second Congress, second session, in reply to House resolution 448, contemplates that the organization for the regular establishment will require 120 aeroplanes and the establishment of aviation centers. In order to carry out these plans the following would be required:

For increasing the present equipment of aeroplanes, hydroaeroplanes, and other air craft for the purpose of warfare and national defense	$1,000,000

[1] One of these machines was completely wrecked in an accident, leaving on hand 14 machines.

To be expended, as follows:

100 aeroplanes	$600,000
Maintenance, including service, spare parts, gasoline, oil, etc	200,000
Auxiliaries, including hangars, tractors, motor trucks, etc	200,000
For the establishment of training schools, known as centers of aviation, on the Atlantic, Pacific, and Gulf coasts, on the Great Lakes, at some central interior point, and at as many auxiliary centers as it may be possible to organize with a view to having a school of instruction in each State, for the purpose of training officers of the Regular Army and Organized Militia as aviators	1,000,000

* * * * * * *

Very respectfully,

JAMES ALLEN,
Brigadier General,
Chief Signal Officer of the Army.

The SECRETARY OF WAR.

REPORT OF THE CHIEF OF COAST ARTILLERY.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
COAST ARTILLERY DIVISION,
Washington, October 30, 1912.

SIR: I have the honor to submit herewith an annual report as to the efficiency of the personnel and matériel of the Coast Artillery and certain recommendations which would, in my judgment, if adopted, tend to promote the efficiency of the Coast Artillery arm:

PERSONNEL.

STRENGTH.

On July 1, 1912, the strength of the Coast Artillery Corps was 662 officers (this does not include 14 chaplains) and 17,957 enlisted men. The strength authorized by law is 708 officers (which again does not include 14 chaplains) and 18,471 enlisted men.

The strength of the Coast Artillery Corps was therefore, on July 1, 1912, below that now authorized by law—46 officers and 514 enlisted men.

This shortage includes 18 original vacancies in the grade of second lieutenant, authorized by the act approved March 3, 1911.

The following table shows the personnel required to provide one complete manning body for all of the elements of all coast defenses now constructed and appropriated for, assuming that the Coast Artillery of the Regular Army shall man fully all of the guns, mortars, mines, and accessory matériel in the insular possessions and the Canal Zone and all of the mines and one-half of the guns, mortars, and their accessory equipment in the United States proper, and that the Militia Coast Artillery shall man one-half of the guns and mortars of the defenses of the United States proper:

Defenses constructed and appropriated for.	Officers.	Men.
Regular Coast Artillery required for all mines, power and light plants of home defenses	169	4,970
Regular Coast Artillery required for all mines, power and light plants of insular and canal defenses	43	1,194
Regular Coast Artillery required for all gun defenses of insular and canal defenses	187	4,316
Regular Coast Artillery required for one-half of all gun defenses of home defenses	796	18,547
Total Regular Coast Artillery required	1,195	29,027
Total Militia Coast Artillery required	796	18,547
Total force, regulars and militia, required	1,991	47,574

From the foregoing it will appear that the present authorized strength [1] is short of that required to man the defenses already constructed and appropriated for, assuming that the Organized Militia will furnish one-half the number required for the gun defenses of the home defenses, 494 officers and 10,556 enlisted men.

The coast-defense project submitted in 1906 by the National Coast Defense Board has been slightly modified. The armament of Subic Bay has been reduced and that of Manila Bay, Pearl Harbor, and of the Atlantic and Pacific entrances of the Panama Canal has been increased. The original project required the following personnel:

Defenses constructed and proposed by the National Coast Defense Board.	Officers.	Men.
Regular Coast Artillery required for all mines, power and light plants of home defenses.	182	5,300
Regular Coast Artillery required for all mines, power and light plants of insular and canal defenses	43	1,270
Regular Coast Artillery required for all gun defenses of insular and canal defenses	249	6,131
Regular Coast Artillery required for one-half of all gun defenses of home defenses	902	21,205
Total Regular Coast Artillery required	1,376	33,906
Total Militia Coast Artillery required	902	21,204
Total force, regulars and militia, required	2,278	55,110

The modified project requires:

Defenses constructed and proposed by present project.	Officers.	Men.
Regular Coast Artillery required for all mines, power and light plants of home defenses	182	5,300
Regular Coast Artillery required for all mines, power and light plants of insular and canal defenses	56	1,499
Regular Coast Artillery required for all gun defenses of insular and canal defenses	286	6,658
Regular Coast Artillery required for one-half of all gun defenses of home defenses	902	21,205
Total Regular Coast Artillery required	1,426	34,662
Total Militia Coast Artillery required	902	21,204
Total force, Regulars and Militia, required	2,328	55,866

That is, the present project calls for 50 officers and 756 enlisted men more than was required by the National Coast Defense Board project.

A recommendation has been made to reduce the additional armament proposed for the United States. If this recommendation is approved the number of officers and men required for the United States (as shown in the above table) will be correspondingly reduced.

The Militia Coast Artillery organized and available for service at the present time is given in the following table:

Statement of strength of Coast Artillery troops of the Organized Militia.

State.	Number of companies.	Officers.	Enlisted men.
California	11	36	675
Connecticut	13	51	661
Florida	1	3	52
Georgia	4	15	185
Maine	12	42	611
Maryland	1	3	41
Massachusetts	12	48	759
New Hampshire	4	15	205
North Carolina	5	20	234
New York	31	111	1,903
Oregon	8	28	517
Rhode Island	17	70	953
South Carolina	1	4	58
Texas	1	3	59
Washington	5	21	263
Total	126	470	7,176

[1] Omitting 6 colonels and 1 lieutenant colonel, who by special legislation are now authorized, but whose positions will cease and determine on the retirement, death, or promotion of the present incumbents.

Summarizing, these personnel statistics are as follows:

	Regulars.	Militia.	Total.
Present actual strength:			
Officers [1]	662	470	1,132
Enlisted men	17,957	7,716	25,133
Present authorized strength:			
Officers [1]	708	470	1,178
Enlisted men	18,471	13,734	32,205
Required for defenses constructed and appropriated for:			
Officers [1]	1,195	796	1,991
Enlisted men	29,027	18,547	47,574
Required for complete scheme of defense:			
Officers [1]	1,426	902	2,328
Enlisted men	34,662	21,204	55,866

[1] Excluding chaplains.

In view of the long time required to train Coast Artillery troops to enable them to develop fully the effectiveness of the defenses which have been provided, and of the fact that these defenses would be immediately on the threatened line at the outbreak of war with any maritime power, when there would not be sufficient time to train Coast Artillery troops; in view, also, of the fact that antecedent expenditures amounting to millions of dollars will fail to be of use without a trained personnel, it is urgently recommended that a definite policy be adopted that shall provide for increasing the Coast Artillery personnel pari passu with the construction of coast defenses, and that the personnel of the regular Coast Artillery be increased as soon as practicable by the 494 officers and 10,556 enlisted men necessary to provide a single manning body for the defenses now constructed and appropriated for.

GUNNERS' QUALIFICATIONS.

With a view to stimulating professional interest among the enlisted men of the Coast Artillery Corps and to increasing the effectiveness of the fire of coast guns, mortars, and mines, Congress has authorized the creation of the grades of first-class and second-class gunners, the former receiving $3 per month additional pay and the latter $2. All enlisted men of the Coast Artillery are allowed to participate in certain examinations held annually, with a view to ascertaining the qualifications of candidates as to their theoretical knowledge and practical skill. Additional "gunners'" pay is given to each successful candidate for this extra individual effort; it corresponds to the extra pay given enlisted men of the Infantry and Cavalry who become expert in the use of the small-arms rifle.

With the Infantry and the Cavalry, however, the weapon—the small-arms rifle—is an individual weapon, and skill in hitting the target is based on individual effort; the development of expert riflemen must necessarily increase the firing efficiency of the company or troop organization, since the improved firing of each individual weapon of the company or troop has its effect in raising the figure of efficiency of the whole company or troop.

With the Coast Artillery the conditions are different. The weapon used in the Coast Artillery service must be manned by many men instead of by one man, and this requires efficient team work rather than efficient individual work in order to obtain effective firing.

While the present system of qualifying gunners has served to increase the general knowledge of enlisted men, the efficiency of the Coast Artillery personnel, as measured by its team work in action, has not, it is believed, been increased in proportion to the number of qualified gunners in the company.

The service efficiency of a gun company should be measured by its ability to hit a service target, under service conditions, the greatest number of times within the shortest period of time. The service efficiency of a mine company should be measured by its ability to load, plant, and operate submarine mines and to serve efficiently the guns assigned to the defense of the mine fields.

In order that the greatest return may be had from the money appropriated by Congress for exceptional efficiency in Coast Artillery target practice it is recommended that the qualifications for gunners be based on the ability of the companies to which they belong to hit the target and to plant and operate submarine mines, rather than on the passing of examinations by the men individually.

ENLISTED SPECIALISTS.

Among the technical noncommissioned staff officers of the Coast Artillery Corps called "enlisted specialists" there are three distinct classes—the electrical, whose duties are, briefly, to operate and maintain the electrical installation, searchlights, etc.; the mechanical, whose duties are, briefly, to operate and maintain power plants, machine shops, etc.; the artillery, whose duties are, briefly, to maintain in thoroughly efficient condition the armament proper—guns, carriages, range and position finders, plotting boards, and all accessory devices connected directly with accurate and rapid firing of the armament.

These classes are equally important, and similar grades in each class should be given equal pay and allowances; the opportunity for advancement should be equal in all three classes, and promotion to any grade in any class should be limited to those holding the next lower grade in that class.

It is recommended that the classes be arranged as shown in the following table. All of the enlisted specialists should be entitled to quarters.

Grade.	Now authorized.			Recommended.			Decrease.	Increase.
	No.	Pay per month.	Total yearly pay.	No.	Pay per month.	Total yearly pay.		
Electrical specialists:								
Master electrician	26	$75	$23,400	26	$75	$23,400		
Electrician sergeant, senior grade (now called first class)	74	45	39,960	74	45	39,960		
Electrician sergeant, junior grade (now called second class)	74	36	31,968	100	30	36,000		$4,032
Mechanical specialists:								
Master engineer				26	75	23,400		23,400
Engineer	60	65	46,800,	74	45	39,960	$6,840	
Fireman	60	30	21,600	100	30	36,000		14,400
Artillery specialists:								
Master gunner	42	40	20,160	*26	75	23,400		3,240
Gunner sergeant, senior grade				74	45	39,960		39,960
Gunner sergeant, junior grade				100	30	36,000		36,000
Total	336		183,888	600		298,080	6,840	121,032
								6,840
Net increase								114,192

In order to prevent the reduction of pay of any man now in the service, it is recommended that engineers and electrician sergeants, second class, now in the service, be continued at their present rate of pay as long as they hold their present grades, and that the master gunners now in the service be designated gunner sergeants, senior grade.

INSTRUCTION AND TARGET PRACTICE.

Attention has been paid to developing the Coast Artillery personnel to a high state of Coast Artillery efficiency, and also to increasing its efficiency in infantry marches, field exercises, and small-arms target practice.

Coast Artillery target practice for the year 1911 was satisfactory. The percentages of hits with heavy guns were slightly less than in 1910, but firing was at greater ranges; the mean range for 1911 being 8,267 yards, while for 1910 it was 7,723. The mean ranges for the different classes of heavy guns in 1911 were, approximately, 12-inch guns, 9,000 yards; 10-inch guns, 8,000 yards; 8-inch guns, 7,000 yards.

Night practice with 3-inch guns was very satisfactory, the average percentage of hits being 46.4. In one practice 17 hits out of 18 shots were made, and in two other practices 16 hits out of 18 shots, all at a material target 10 feet high by 24 feet long and at ranges greater than 2,000 yards.

Experimental firing with mortars was continued at Fort Monroe, and the information obtained will serve, it is thought, to increase the accuracy and rate of fire of mortars.

The Board of Artillery and Ordnance Officers convened at Sandy Hook, N. J., in 1910, has continued its experimental work, having for its object the determination of causes which affect accuracy of fire. Data is being collected looking to the further study of the powder problem as it applies to the practical artilleryman, including the study of the effects of storing, blending, and handling powder.

The Regulations for the Instruction and Target Practice of Coast Artillery Troops for 1912 were prepared with a view to further advancement and progress in target practice. Among the new features may be mentioned the following:

Compound powder blending.—This is a method of blending together two or more lots of powder so that all the charges will contain equal amounts of each lot of powder used. This method becomes necessary when a particular battery has not on hand a quantity of any one lot of powder sufficient for the practice. This will be the normal case probably in time of war.

Fire command, battle command, and emergency practice.—Heretofore companies assigned to guns above 3-inch in caliber have held two battery practices each year. For the year 1912 the Regulations for the Instruction and Target Practice of Coast Artillery Troops require the second practice, when practicable, to be fire command or battle command practice, in which all the batteries of the command fire under the direction of the fire or battle commander at two or more targets, as would likely be the case under war conditions; when not practicable, to have fire command or battle command practice, it is required that the second practice shall be emergency practice, involv-

ing casualties to the several features of the fire-control matériel and personnel, such as might obtain in action.

Angular course of target.—The regulations prescribe that the course of the target shall make such an angle with the line of fire as to insure a material change in the range during the practice. This involves a more severe test to the personnel in range finding and correcting than has obtained heretofore.

Increase in the number of umpires and increase of umpires' authority.—The number of umpires has been increased so that all practices may be held as far as practicable in the same month. This will permit of a more uniform schedule of instruction for the year, and consequently a better coordination of instruction throughout the Coast Artillery Service. The authority of umpires has been extended to include immediate decision on all questions except those involving additional expenditure of ammunition. The umpire is made practically the personal representative of the division commander in regard to the decisions of such questions.

Changes have been made in the Coast Artillery Drill Regulations increasing the time interval for the fire-control service and prescribing the use of a time-range board. These changes were made with a view to insuring more deliberation and care in the operations of position finding and transmission of ranges and to checking team errors made antecedent to firing.

Rapidity of firing in target practice has been encouraged, but not at the expense of accuracy or safety. Considerations of safety have necessitated one or two minor changes in the method of loading that will retard the normal rate of loading a few seconds.

THE SERVICE OF SUBMARINE MINES.

INSTRUCTION AND PRACTICE.

The submarine mine instruction and the mine practice of the 43 mine companies have been generally satisfactory during the past year, and it has been demonstrated that the personnel charged with the submarine mine service can be depended upon to serve the mine feature of our coast defenses with a high degree of efficiency.

MINE PLANTERS.

The several mine planters provided for mining instruction and for planting mines in particular harbors in case of war have continued to perform their regular duties in an entirely satisfactory manner. In addition to the instruction and inspection duties regularly performed by the officers assigned to these vessels, much valuable experimental work has been done.

With the cooperation of the Secretary of the Navy and the Secretary of Commerce and Labor the equipment of the 31 lighthouse tenders for use as emergency mine planters in case of war has progressed as rapidly as possible. The reports received indicate a most gratifying interest and efficiency in this work on the part of the personnel of these vessels, and it is believed that these vessels, in addition to those similarly equipped with the cooperation of the Chief of the Quartermaster Corps, will provide an invaluable reserve in case of emergency.

MANUAL FOR SUBMARINE MINING.

The manual for submarine mining has been further revised as the result of recent experimental work and will be issued to the service at an early date.

COAST ARTILLERY RESERVES.

There has been no material change in the strength of the Coast Artillery reserves. The total number of companies has been increased by eight over that reported last year. The strength of the reserves at present is 470 officers and 7,176 enlisted men. There has been very satisfactory progress in instruction and an increased number of companies have held service target practice with gratifying improvement in the results. The instruction of the Coast Artillery of the militia of the States has been coordinated by a War Department general order which establishes standard courses of instruction for officers. Examinations in the courses are held semiannually, the examination questions are prepared by the school board of the Coast Artillery School at Fort Monroe, Va. Those officers who pass these examinations successfully are given certificates of qualification signed by the Chief of Coast Artillery. A great many militia officers have availed themselves of this opportunity during the present year to establish their professional qualifications, within the limits of these examinations. Instruction by regular Coast Artillery officers detached from the Coast Artillery Corps, under the act of Congress approved March 3, 1911, has continued, and the following officers are now assigned to this duty:

Lieut. Col. George W. Gatchell	Rhode Island.
Capt. James B. Mitchell	New York.
Capt. Clarence B. Smith	Washington.
Capt. Russell P. Reeder	Massachusetts.
Capt. Robert W. Collins	Oregon
Capt. Henry Casey	California.
Capt. David Y. Beckham [1]	Maine.
Capt. Brainerd Taylor	Connecticut.

During the fiscal year ending June 30, 1912, joint Army and militia coast defense exercises were held in the following-named Artillery districts for periods as shown:

Portland (Maine Militia)	July 16 to 23, 1911.
Portland (New York Militia)	July 3 to Aug. 20, 1911.
Boston (Massachusetts Militia)	July 9 to 18, 1911.
Narragansett Bay (Rhode Island Militia)	July 9 to 16, 1911.
New London (Connecticut and New York Militia)	July 17 to 26, 1911. June 16 to 27, 1912.
Baltimore (Maryland Militia)	July 15 to 25, 1911.
Cape Fear (North Carolina Militia)	Aug. 7 to 18, 1911.
Charleston (South Carolina Militia)	July 1 to 15, 1911.
Tampa (Florida Militia)	June 4 to 16, 1912.
San Diego (California Militia)	July 1 to 15, 1911.
San Francisco (California Militia)	June 1 to 15, 1912.
Puget Sound (Washington Militia)	July 9 to 23, 1911.

During these exercises the annual target practice of the Militia Coast Artillery was held and, as stated above, the results showed satisfactory improvement over those of the previous year. In many cases the militia were intrusted with practically all of the work connected with the preparation and conduct of target practice, under the supervision of the Regular Army instructors.

[1] Capt. Beckham relieved Maj. Marcellus G. Spinks, Coast Artillery Corps, on September 25, 1912.

COAST ARTILLERY SUPPORTS.

Attention is again invited to the necessity of deciding on some policy looking to providing coast-artillery supports for all of the coast fortifications. Artillery supports are the mobile troops required for the defense of the rear of forts when attacked by small hostile parties landed in the vicinity of the forts from warships. Such supports must be kept immediately in the rear of the fortification to guard against sudden attacks and raids. They should not be confounded with the "coast guard," which is part of the main field army assigned to the defense of the general coast line against a landing in force by an enemy from transports.

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EXAMINATION OF OFFICERS FOR PROMOTION.

It is believed that no one thing has done more to raise the standard and increase the efficiency of officers of the Army than the requirement that they shall pass successfully an examination before being promoted. Not only has a standard of proficiency been established, but officers in preparing for their examinations have been led beyond the bare effort required for the examinations into habits of study that have influenced beneficially their subsequent professional careers. At the time the law went into effect, in 1890, it was deemed expedient to limit examinations to lieutenants and captains, and this is still in force. Whatever may have been the reason for this limitation at that time, it is believed that there is no longer any sufficient reason why it should not be extended to include field officers; it is believed that the good of the service would be better served if majors and lieutenant colonels were examined physically and mentally before promotion, and if only those who were found qualified should receive promotion.

As to the necessity for this examination of field officers of Coast Artillery, it may be stated that while the duties of field officers do not, as a rule, demand that direct personal application of detailed technical knowledge that is necessary in the junior grades, they do require such a knowledge of technical matters as to enable them to supervise properly the work of juniors, and moreover they call for a high class of physical activity and special information. It is believed that the examination of field officers of Coast Artillery for promotion would do much to stimulate to even greater activity the Coast Artillery commissioned personnel throughout its later years of service on the active list and would thereby advance the general efficiency of the corps.

PRELIMINARY COURSE OF INSTRUCTION FOR OFFICERS APPOINTED TO THE COAST ARTILLERY CORPS.

All newly-appointed second lieutenants of the Coast Artillery Corps are sent to Fort Monroe, Va., for a short course of instruction in the duties of their new position.

These young officers are attached to companies in the garrison and perform the regular company and post duties. They are placed under a field officer of experience, who gives them a thorough course of

instruction in all of the miscellaneous duties of subalterns and in the unwritten customs of the service. The effect of this instruction is immediate. The young officers leave for their permanent stations after a few months well grounded in these duties, ready to be of real assistance at their new posts and free from that embarrassment which has heretofore characterized the beginning of a military career.

The gradutes of the Military Academy this year who were assigned to the Coast Artillery reported at Fort Monroe on September 15 for a similar training in such garrison work as is not covered by the course at the Military Academy.

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COAST ARTILLERY BOARD.

During the past year the Coast Artillery Board has rendered invaluable assistance to the office of the Chief of Coast Artillery in conducting practical experiments and tests with a view to improving artillery matériel and methods and in making recommendations on subjects referred to it by the Chief of Coast Artillery.

Some of the important subjects considered were: Mortar firing, type emplacements and fire-control structures, long-nosed projectiles, the submarine mine manual, short horizontal base range finders, electrical transmission device, signaling devices, motors for yawl boats, cable insulation, automatic anchors, internal combustion engines, drill regulations, radiotelegraphy, correction devices, subcaliber target practice, and carbons for searchlights.

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MATÉRIEL IN HOME PORTS.

Since the report of the Endicott Board in 1886 the expenditures for coast defense of our home ports, including ammunition and maintenance charges, has amounted to $118,353,566.77.[1] Analysis of the work remaining to be accomplished to complete the coast-defense project of the National Coast Defense Board, as revised to date, shows $38,933,395.38 still required. The fortification bill for 1913 carries for coast defense of the home ports $1,659,000, of which $326,000 is applicable to new construction and equipment and the balance to maintenance and current needs for the year, such as ammunition for Coast Artillery practice. It would thus appear that the system of coast defense for the United States is approximately 75 per cent completed. This is not, however, wholly accurate, since a considerable portion of the total expenditures has been for maintenance, a charge that increases with the number of batteries. Of the 1,367 seacoast cannon originally projected, 1,198 are now emplaced, indicating that the defenses are 86 per cent completed. As a general rule, however, the guns yet to be mounted are of the larger calibers, which would reduce this percentage. On the other hand, the improvement in Coast Artillery practice has so increased the actual fighting power of the guns that in many cases harbors may be considered as amply fortified which, under the project of the National Coast Defense Board, are still lacking a portion of their armament, and during the past few months it has been agreed that

[1] The total appropriations amount to $122,135,260.74. Of this $1,043,998.81 was returned to the Treasury; $42,122.88 was expended in the insular possessions; there is an available balance of $2,695,572.28

36 of the guns carried in the original plans may be omitted. In so far as emplacements and guns are concerned, it may be assumed that the plans are about 90 per cent completed.

With reference to submarine mines, ammunition, fire-control systems, searchlights, and power plants, the situation is as follows:

Only seven of our harbors have received a standard installation for fire control. The standard installation for Fort Monroe, Va., is now under way. The other districts are working under temporary systems which, while in general satisfactory for instruction purposes, are expensive to maintain and might be destroyed even in the early stages of an engagement.

During the past year a 17-foot self-contained horizontal base range finder has been tested and has been found to be much more accurate than a 12-foot base instrument of similar type previously tested. A competitive test of short horizontal base instruments will be held at Fort Monroe, Va., beginning July 1, 1913, and it is hoped that an instrument will be developed which will prove even more accurate than the 17-foot instrument. The excellent results shown by this type of range finder, if confirmed by subsequent tests, will warrant, it is thought, a modification of the present standard fire-control system, substituting in part the self-contained horizontal base instrument for the long base system. It is estimated that such a modification would effect a considerable saving.

It is estimated that $4,302,499 would be required to complete the standard fire-control systems recommended by the National Coast Defense Board in all fortified harbors, but it is thought this estimate may be reduced by about 10 per cent to 20 per cent by reason of simpler methods developed by the experience of the past six years and those promised by the self-contained horizontal base range finder. If this prove true, the fire-control features of the coast-defense system may be said to be about 60 per cent completed.

With reference to the other accessories and the ammunition and mines, it may be stated that, for home ports and based on the estimates of the National Coast Defense Board, their percentages of completion are approximately as follows: Searchlights, 41 per cent; power plants, 50 per cent; ammunition, 70 per cent; and submarine mines and structures, 81 per cent. Should the policy hereinafter recommended for the installation of power plants be adopted, it is believed that the estimate for the completion of this installation ($4,450,333) may be reduced by about 20 per cent to 30 per cent.

It should be mentioned in this connection that the modernizing of the older emplacements and altering the older guns and carriages will require $3,210,254.34, for which practically no appropriation has been made for the fiscal year 1913, as the item of $300,000 carried under the Ordnance Department for "Alteration and maintenance" is required for maintenance and minor repairs only.

It appears from the foregoing that little advance can be hoped for unless the appropriations be increased.

For the past several years the policy of the War Department has been to request funds for accessories in the United States rather than for continuing the general fortification scheme, new construction being confined to our insular possessions. This has been because the efficiency of the armament is reduced about one-half until these accessories are provided.

An exception to this rule has been the project for the entrance to Chesapeake Bay. Funds for the purchase of land on which to place fortifications to protect the great cities on or near Chesapeake Bay and prevent the use of that bay, and especially the Lynn Haven Bay anchorage, as a naval sortie port, or base for invasion, have been recommended consistently for several years. The approximate total cost of the Chesapeake Bay project is now estimated as $1,801,700. It is thought the present project should be modified so as to provide 14-inch or 16-inch guns instead of 12-inch guns. On account of the value of the interests to be protected and the increasing strength of the navies that may be brought against these fortifications, it is believed unwise to mount a weapon inferior to those which foreign warships might bring against them.

It is believed, also, that the time has arrived when another exception to the general policy should be made, even at the cost of delaying the supply of accessories for completed fortifications. The increasing commercial importance of Los Angeles suggests strongly that the plans for fortifying its harbor should be taken up and construction work begun. It was recommended that the estimates for 1914 include $653,256 for the purchase and emplacement of two 14-inch guns at the San Pedro Reservation, Los Angeles Harbor; this was reduced later to $228,000, the amount it was thought could advantageously be expended during the year.

MATÉRIEL IN THE INSULAR PORTS.

During the past year the policy of preceding years has been continued in the installation of defenses of our insular ports. The work has been continued in Manila and Subic Bays and at Honolulu and the entrance to Pearl Harbor. No work is in progress at Guantanamo, Guam, San Juan, Porto Rico, or Kiska, Alaska. At Guantanamo there have been constructed emplacements for several seacoast cannon. The guns and carriages for these batteries have been completed and are held in readiness to be mounted as soon as the naval project at that place advances sufficiently to warrant a personnel being assigned.

In the Philippine Islands and Hawaii gratifying progress has been made. The fortification of Subic Bay has been completed. At Manila Bay the armament of Corregidor Island is completed and mounted with the exception of four mortars, which are now under manufacture and will be shipped this fall. The fire-control installation also is completed, and there remain only some small items for completing the submarine mine structures.

On Carabao Island the emplacements for the 14-inch gun batteries and the mortar battery are practically completed. The guns and carriages will be shipped in the fall and mounted probably before the close of the fiscal year. With the installation of this armament the strength of the defenses of Manila Bay will be greatly increased. The fire-control and searchlight installations for Carabao have proceeded simultaneously with the battery construction, and the mounting of the guns will complete the defense at that point.

On Caballo Island the emplacements have been started, and the armament for the batteries is under construction.

It is believed that the last obstacle to the success of the project for the fortification of El Fraile Island has been met by the latest plan of construction.

To summarize, it was estimated last year that $2,025,414 was necessary to complete the Manila Bay project, exclusive of ammunition. The fortifications bill for 1913 carried $800,000 for new construction, leaving $1,225,414 still required. The approaching completion of the work has enabled a later estimate to be made, and the amount thought necessary has been reduced to $1,163,314. The estimates for 1914 carry the following:

To complete the batteries	$1,000,000
To complete searchlight installation	20,600
To complete the work on mining structures	67,000
Total	1,087,600

Leaving $75,714 to be included in later estimates for completing the fire control, the electrical installation, and certain work on the armament.

The preparation of Corregidor Island to resist siege operations and attacks by landing forces is being pressed. Bombproof structures are under construction for important storehouses and power plants. The number of small-caliber rapid-fire guns and of siege pieces has been greatly increased during the past year. For the greater part of these permanent emplacements with concrete revetment have been prepared at points considered advisable, though the guns themselves may be easily and quickly moved to any threatened point. Trails and roads for interior communications have been or are being prepared, and a complete system of telephonic communication is in process of installation, wires being under ground.

In the Hawaiian Islands the progress has been satisfactory also. Three batteries have been completed, and funds are available for the completion of three more and for beginning the work on the two rapid-fire batteries of Fort Kamehameha at the entrance to Pearl Harbor. The last of the guns and carriages under construction for the primary armament will be ready for shipment soon, and the end of the fiscal year (1913) should see the defense completed, except for the two rapid-fire batteries at Fort Kamehameha. The appropriation for 1913 has reduced the amount remaining necessary for the completion of the original project for seacoast defense of Oahu to $255,831, and of this amount the Chief of Ordnance was authorized to enter into contract to the extent of $71,400 for the purpose of construction of the last of the guns and carriages called for in the defensive plans.

The important strategic position of Oahu has led to a study on the ground of its defensive necessities. It has been recommended that additional mortar batteries be located at selected positions on the shore line of the island with a view to preventing landings in force by an enemy. This question has been referred to a special board of officers for consideration and report.

MATÉRIEL, ISTHMIAN CANAL.

The total cost of fortifying the entrances to the Panama Canal is estimated at $10,775,014, exclusive of housing the manning personnel. Three million dollars was appropriated for the fiscal year 1912.

Five million six hundred and forty thousand nine hundred and fifty dollars was the estimate for 1913, and $2,806,950 was carried in the sundry civil bill for 1913. From the above it may be seen that over half of the amount originally estimated has been appropriated.

Work on the defenses is progressing rapidly, and if funds are made available the fortification will probably be completed before the formal opening of the canal.

Itemized, the estimates and appropriations for 1913 were as follows:

	Estimates.	Appropriations.
Surveys	$62,000	$50,000
Purchase of land	50,000	.....
Causeway	150,000	150,000
Seacoast batteries	2,000,000	1,000,000
Power plants	140,000	.....
Searchlights	285,000	.....
Mine structures	220,200	220,200
Field fortifications and camps	422,000	200,000
Guns and carriages	1,000,000	500,000
Mines	111,750	111,750
Fire control	400,000	.....
Ammunition	800,000	575,000
Total	5,640,950	2,806,950

THE TORPEDO DEPOT.

The matériel required for the submarine mine defense of the important harbors of the United States and the insular possessions is supplied from the torpedo depot at Fort Totten, N. Y., by the disbursing officer, who purchases and issues this matériel under rules prescribed by the Secretary of War.

During the year the depot has continued to purchase new mine equipment and to supply the necessary matériel for the care and preservation of existing mine equipment.

When contracts now under way are completed, all posts in the United States and the insular possessions provided with mine equipment will have their service supply of explosive.

Comparative tests are in progress with a view to determining a suitable type of gasoline motor for installation in yawl boats.

The specifications for submarine cable have been revised during the year to conform to the most recent practice.

SUBMARINE MINE DEFENSE.

To complete the mine defenses for the home and insular ports, it is estimated that the following amounts will be necessary:

	Submarine mine structures.	Submarine mine matériel.	Totals.
Home ports	$379,659	$1,287,775	$1,667,434
Insular ports	294,000	322,150	616,150

Recent war has demonstrated the value of submarine mines as an element of harbor defense. If a harbor be defended by an efficient system of mines provided with the requisite guns and searchlights for their protection against countermining, sweeping or other methods of removing them, it is not believed that any enemy, however enterprising, will ever attempt to force an entrance into a harbor with large ships. Submarine mines, alone of all the elements of the defenses, are practically unaffected in efficiency by darkness, fog, or other adverse weather conditions. After they are once planted, they are thereafter always immediately available and effective. It is a matter of satisfaction that severe tests have proved our system of mines to be exceptionally efficient as a war weapon. The necessity for completing at once the submarine mine equipment has been frequently urged in past reports of my predecessors. In the annual report of the Chief of Coast Artillery for 1910 it was stated that—

> We can not afford to wait for war before completing our mine defense, but must be prepared beforehand; for unless we are thus prepared no amount of money made available at the outbreak of war could procure mine material in time to be of service in mine defense against an active enterprising enemy. Essential parts of this material, such as cables, mine cases, and electrical apparatus, can not be bought in open market, but must be manufactured to order, and after having been ordered it requires months to fill the orders. If confronted suddenly by war, only such material as is on hand can be utilized for immediate mine defense, and if any essential part of the mine system is lacking, the whole mine defense must fail. The complete mine equipment of every harbor to be mined should be kept on hand ready to be planted, and it should be made possible to mine effectively every harbor within 48 hours.

With the exception of the cable, the supply of the essential parts referred to above has been practically completed for all of the existing home ports except for the artillery districts of Galveston and New London. The need of making immediate provisions for the additional cable absolutely required to enable the mines, which are already provided, and for which all the principal accessories are also provided, to be planted at all home ports in case of emergency is an urgent one.

For the fiscal year 1914 the estimates for submarine mines for home ports will amount to $161,084, and will provide for some of the matériel necessary for the equipment of the Artillery District of New London and for one-half the total additional cable necessary for the service of mines already on hand.

SEARCHLIGHTS.

It is estimated that it will require $2,536,600 to complete the searchlight equipment for the United States forts.

The estimates recommended for the fiscal year 1914 will include $250,000 under this item, to be expended in the Artillery Districts of Southern New York and Boston. It is expected that this sum will complete so much of the searchlight installation in these districts as is practicable in time of peace. Twenty-three 60-inch lights are required. Fourteen have been purchased. Of these four have been installed tentatively.

These districts are provided with complete modern armament and the most modern fire-control installations. It is essential that the armament and fire-control equipment shall be supplemented by a

permanent searchlight equipment if the fortifications are to be effective in night action.

It should be kept in mind that searchlights of the power necessary for coast-defense purposes can not be obtained in open market on the outbreak of war or when war is imminent. They are a special article of manufacture and require normally approximately one year to supply. The mirrors can not be obtained in the United States.

The appropriation for searchlights for the fiscal year 1913 was only $25,000. Over half of the artillery districts in the United States are now provided with less than one-third of the searchlights required for their proper service. Moreover, in a few years it will become necessary to begin the replacement of worn-out and obsolete lights; many of those first purchased are now practically obsolete, and some nearly unserviceable through wear and tear incident to use.

Unless appropriations be increased for searchlights, the efficiency of the coast fortifications for night action will be destroyed in all localities where effective lights are lacking.

ELECTRICAL INSTALLATIONS AT COAST FORTS.

It is estimated that it will require $4,450,333 to complete the electrical installations for coast forts in the United States.

The estimates for the fiscal year 1914 will include $50,000 under this heading, this amount being required chiefly to provide for the replacement of certain worn-out local power plants now in use.

From past appropriations central power plants of a modern oil-burning type have been installed at Forts Winfield Scott, Stevens, and Casey. Forts Baker and Barry have central plants made up of groups of 25-kilowatt gasoline sets. Apart from these central-plant installations, 15 independent local 25-kilowatt gasoline sets were purchased from the appropriation for the year 1909 and were installed as follows: One each at Forts Rodman, Michie, Whitman, Foster, du Pont, Armistead, Moultrie, Dade, and Canby, and three each at Forts Terry and Taylor. Eight of the same type sets were purchased from the appropriation for 1910, and these have been installed as follows: One each at Forts Williams, Andrews, Standish, Banks, Totten, and Canby, and two at Fort Hamilton.

After a careful consideration of the conditions existing at the date of its report, the National Coast Defense Board recommended as follows:

1. That the electrical power for fortification and defense purposes be furnished by an adequate steam-driven, direct-current producing central power plant, all machinery to conform in type to approved commercial standards.
2. That each battery or group of batteries, depending upon local conditions, be equipped with direct-current generators, gas or oil engine driven, installed as a reserve to the central plant.
3. That searchlights, except such as are in close proximity to the central plant, be provided with and operated by self-contained units.

Notwithstanding the fact that the National Coast Defense Board recommended the central-plant system as the fundamental one to be considered, it had in mind the dangers that might come to the whole defensive system from injury to that system, and therefore supplemented this recommendation by the further recommendation that each battery or group of batteries, depending upon local conditions, be supplied with an independent local reserve generating set, as indicated in the second paragraph quoted above.

At the date of the report of the National Coast Defense Board the steam-driven central plant afforded the most reliable and satisfactory method of producing power for fortification purposes, especially where the fortification plant was required also to provide light and power for post purposes. Since that time, however, the rapid extension and development of commercial power transmission lines has greatly simplified the question of the economical provision of power for post lighting and power purposes, in many cases eliminating the necessity for a central plant altogether. The development of oil and gasoline engines has at the same time progressed to a remarkable degree, so that, having in mind the special conditions which obtain at coast fortifications, including the danger to the fortifications resulting from interruption of power from a central source, and having in mind also the varying and infrequent loads required of generators for coast fortifications, the real advantage is considered to lie decidedly with the separate local plants. Following this line of analysis, a 25-kilowatt direct-connected gasoline engine set has been developed especially to meet the needs of coast fortifications, which has in general proved very satisfactory. Approximately 160 of these sets have been installed for both power and searchlight purposes in our fortifications.

For the foregoing reasons it is believed that the necessity for central-fortification plants, as recommended by the National Coast Defense Board, no longer exists, except in some special cases—for example, where power from outside commercial sources can not be obtained.

It is believed that in future the adopted policy should be:

1. To provide all batteries requiring power for fortification purposes (or, in certain cases, groups of batteries) and in general all searchlights, with suitable local direct-connected direct-current generating sets, preferably oil or gasoline engine driven; these local plants to be so interconnected and provided with suitable reserve sets as to insure continuity and flexibility in service.

2. In general, in time of peace, to purchase the power for the post lighting system and for other similar post purposes, when it is in the interest of economy to do so, from commercial sources, and in such case to separate the post lighting system from the fortification system.

3. To install a central plant in case it is impracticable advantageously to purchase power for the post service, and in case the fortification system is insufficient for that purpose; such plant to constitute a reserve for fortification purposes.

4. To employ direct current for the post service systems in all cases except where transmission conditions are such as to render the use of direct current decidedly uneconomical.

5. The Quartermaster Corps to install a suitable reserve plant, in case the fortification system does not provide such a reserve, in all cases where power is purchased from a commercial source; the object of this arrangement being to provide for the actual necessities of the post in time of hostilities in case the source of commercial power be interrupted.

6. In general to provide, whenever practicable and advantageous, for interchangeability between the post and fortification power systems, including the introduction of suitable converters whenever these are necessary.

7. All power plants to be operated under the supervision of the Coast Artillery authorities, employing, whenever practicable, Coast Artillery enlisted personnel for that purpose, the object of this being to insure coordination and to prevent a division of responsibility in case of emergency.

It is believed that the system above outlined will provide for maximum reliability for fortification power in time of war and for maximum economy in time of peace.

BARRACKS AND QUARTERS, HOME PORTS.

In 1907 it was estimated that $8,897,300 would be required to effectively house the Coast Artillery Corps, consisting of 170 companies and the necessary personnel connected with the Coast Artillery Corps in the United States. Since that time $5,289,060 has been appropriated, leaving a balance of $3,608,240 yet to be appropriated. The accompanying table shows the proposed distribution of Coast Artillery Corps troops in the United States as approved by the Secretary of War July 17, 1912, and the number of barracks and quarters required in addition to those now provided for the Coast Artillery Corps personnel, medical officers, and the post noncommissioned staff on duty at Coast Artillery posts:

* * * * * * *

Very respectfully,

E. M. WEAVER,
Brigadier General, Chief of Coast Artillery.

The CHIEF OF STAFF, UNITED STATES ARMY.

REPORT OF THE CHIEF OF THE BUREAU OF INSULAR AFFAIRS.

WAR DEPARTMENT,
BUREAU OF INSULAR AFFAIRS,
Washington, December 19, 1912.

SIR: I have the honor to submit the following report of the Bureau of Insular Affairs for the past year:

PHILIPPINE ISLANDS.

LEGISLATION ENACTED BY THE SIXTY-SECOND CONGRESS, SECOND SESSION.

PHILIPPINE CITIZENSHIP.

In accordance with the recommendation repeated for several years by the Philippine Commission and this bureau, and supported by the Secretary of War, Congress by the act of March 23, 1912, amended section 4 of the organic act of the Philippines, defining Philippine citizenship, so as to give the insular legislature authority to extend by law Philipine citizenship to certain Filipinos excluded by the terms of the organic act and to admit as citizens of the Philippines such other persons residing in the islands as could become citizens of the United States were they residents therein. This was the only legislation affecting the Philippines enacted during the last session of Congress.

PENDING AND NEEDED LEGISLATION.

Various bills affecting the Philippines were introduced or considered during the last session of Congress without reaching the stage of completed legislation. A number of these were in support of recommendations made by the Philippine Commission, this bureau, and the Secretary of War. Others were introduced without suggestion from those connected with the executive direction of insular affairs, and, in some instances, in opposition to the recommendations. There are, in the view of this bureau, but few Philippine matters now demanding immediate legislative action by Congress, but some of these few are of especial importance.

INCREASE OF LIMIT OF BONDED INDEBTEDNESS FOR PUBLIC WORKS.

The extension of this limit, now fixed at $5,000,000, has been repeatedly urged, and a detailed statement has been submitted to Congress showing the expenditure of the proceeds of the outstanding bonds as well as the expenditure of relatively large amounts for public works from the ordinary revenues of the islands. The current revenues, however, are not sufficient to warrant continued expenditure of the amounts required for needed improvements, while the amounts already expended have been obtained in part by reducing the needed allotments for school and other important purposes. The Philippine Commission for the last three years has requested authority to issue bonds for public works to an additional amount of $15,000,000, not more than two and a half millions to be expended in any one year. This is a modest request in view of the pressing needs of the islands and in comparison with the amounts expended from time to time by many of our States and some of our municipalities. The Philippines have an area of some 115,000 square miles of scattered territory and a population in 1903 of 7,635,426, while Pennsylvania, having in 1910 a population of 7,665,111 inhabiting 49,000 square miles of compact territory, is contemplating a debt of $50,000,000 solely for the improvement of its public highways.

The bonded indebtedness of the Philippine government at present is limited to two issues, the friar-land bonds, $7,000,000, and the public works permanent improvement bonds, $5,000,000, while municipal bonds have been issued only for the city of Manila, $4,000,000, and the city of Cebu, $125,000. The following table shows, comparatively, the per capita debts of various countries, many of which must be considered less prepared than the Philippines to support the burdens shown:

Countries.	Per capita debt.	Per capita interest.	Countries.	Per capita debt.	Per capita interest.
New Zealand	$363.05	$11.58	Haiti	$24.05	$1.26
Uruguay	124.81	7.67	Turkey	22.95	3.21
Argentina	91.50	4.38	Santo Domingo	19.97	1.78
Chile	47.10	1.93	Mexico	14.50	.87
Servia	44.88	2.23	Venezuela	14.42	.72
Egypt	40.95	1.56	United States	10.88	.23
Brazil	38.60	1.36	Ceylon	6.54	.34
Cuba	28.76	2.01	Colombia	5.26	.30
Japan	26.00	1.45	Philippine Islands	1.50	.06

The immediate necessities in the way of public works in the Philippines which can not at this time be well met from the current reve-

nues include new wharves at Manila and the improvement of the Pasig River, which, in effect, is a part of the port of Manila, and a new arrastre plant for freight handling at the Manila customhouse, $1,000,000; similar improvements at Iloilo and Cebu, $400,000; improvement of the port of San Fernando, La Union, $400,000; improvements of other ports, $400,000; irrigation projects, $1,000,000, and a capitol building. This building is designed to be erected in sections as the needs of the insular government grow. The present offices are far too crowded and the present demands warrant expenditure for this purpose of $1,000,000.

Other permanent improvements needed include new customhouses at Manila and Iloilo, school and university buildings in Manila, provincial hospitals, bridges, etc. It is estimated that at the rate of constructing roads now possible from current revenues it will require 25 years to complete the roads at present necessary. The growing industries of the islands make a constantly increasing demand for good roads, and when it is remembered that the Americans found such roads practically unknown away from the immediate vicinity of the larger cities, the importance of this work becomes manifest. Densely populated areas elsewhere in civilized countries have had the benefit of much effort in this way on the part of preceding generations; but in the Philippines the lack of roads threatens to become an increasing handicap to Filipino progress.

The preparedness of the Philippine government to assume the responsibility of an addition to its bonded indebtedness is apparent from an analysis of its receipts and expenditures:

	1911	1912
Revenues	$12,722,760.22	[1] $15,623,836.69
Expenditures:		
Fixed charges	1,609,399.01	1,389,931.47
Public works from revenues	2,899,577.16	3,338,963.85
Administrative expenses, including aid to provinces	9,179,583.38	10,791,013.61
Total expenditures	13,688,559.55	15,519,908.93
Excess expenses over revenues for 1911	965,799.33	.....
Excess revenues over expenses for 1912	.....	103,927.76

[1] This amount includes $1,698,513.82, transferred from the gold-standard fund to the general funds in the treasury, omitting which the revenue for 1912 was $13,925,322.87, or an increase of $1,202,562.65 over 1911.

Even the cost of carrying $15,000,000 additional bonded indebtedness at 4 per cent interest, with a 3 per cent sinking-fund provision, would be less than one-third of the amount from the current revenues devoted in 1912 to public works.

The outstanding friar-land bonds amount to $7,000,000, but these are by law to be redeemed largely through the sale of the land purchased. The only remaining liability of importance to the Philippine government lies in its guaranty of interest on certain railway bonds, which is so carefully protected as to make it no more than a temporary burden.

During the last session the Senate passed a bill—S. 4762—which is now with the House Committee on Ways and Means, increasing the limit of bonds for public works to $15,000,000. This would mean authority for the issue of bonds for $10,000,000 in addition to the bonds now outstanding. The Committee on Insular Affairs, however,

had reported on March 4 a bill—H. R. 20049—providing for only $5,000,000 additional. It is hoped that the Senate bill may be favorably considered by the House or the limit fixed by the House bill may be increased, so that at least the limit of $15,000,000 may be authorized without the necessity of again appealing to Congress.

SILVER-CERTIFICATE RESERVE.

Section 8 of the "Act to establish a standard of value and to provide for a currency system in the Philippine Islands," approved March 2, 1903, authorizes the use of silver certificates on the deposit of coined silver pesos in the Philippine treasury, and provides that the coin so deposited shall be retained in the treasury and held for the payment of silver certificates on demand and used for no other purpose.

It has been found in the Philippines, as elsewhere, that the certificates are far more convenient as a circulating medium than the coin, and as a result there is at present in circulation ₱20,000,000 of the silver coinage and ₱24,000,000 of the silver certificates. The requirement that only coined silver shall be held in the reserve resulted in an inconvenience, which was partly remedied by the act of June 23, 1906, which provided that the treasurer of the Philippine Islands, with the approval of the Governor General, might substitute for such silver pesos on deposit gold coin of the United States, which was not to exceed 60 per cent of the total amount of certificates outstanding. This had the twofold effect: First, of permitting an increase in the currency without awaiting the coinage of additional pesos, and to this extent was desirable; and, second, of materially increasing the intrinsic value of the reserve. The latter was incidental and of no particular value, in that the reserve had been sufficient from the first.

Experience has now demonstrated the advantage of two modifications of the certificate-reserve requirement: First, the great convenience and added safety of keeping part of this reserve in the United States rather than in the Philippine Islands; second, the Philippine government should be permitted to profit by the safe and conservative use of a part of this reserve. It is believed that the government should be authorized to invest 60 per cent of such reserve in safe securities or to deposit on proper security this amount at interest in banks in the United States or the Philippine Islands.

A bill which would make effective this recommendation was introduced in the Senate at the last session (S. 4756), and the early consideration of this bill is recommended.

TO RESTORE LEGISLATIVE CONTROL OVER ALLOTMENT OF INTERNAL-REVENUE COLLECTIONS TO THE PHILIPPINE LEGISLATURE.

At the time the Philippine tariff act of 1909 was under consideration only 40 per cent of the internal revenue collected in the islands accrued to the general government thereof. To meet a possible reduction in income from customs duties under the new law section 5 of the customs tariff act of August 5, 1909, gave to the Philippine Commission authority to allot the internal revenues without awaiting action of the Legislature. Pursuant to this authority, the Philippine Commission passed an act, No. 1964, under which 60 per cent of the

internal-revenue collections subject to apportionment was allotted to the insular government, with the proviso that the amount set aside for provinces and municipalities should not exceed the amount so allotted in the fiscal year 1909. Following the establishment of free trade between the United States and the islands the internal-revenue collections showed marked gains, and under the reapportionment the provinces and municipalities received annually only the same amount as in the fiscal year 1909, while the increase accrued to the insular government. The act of August 5, 1909, provides:

And provided further, That, until action by the Philippine Legislature, approved by Congress, internal revenue paid into the insular treasury as hereinbefore provided shall be allotted and paid out by the Philippine Commission.

On February 1, 1912, the Philippine Legislature enacted as Act No. 2127 a bill which had been introduced in the Philippine Assembly. The effect of this act, when approved by Congress, will be to return to the Philippine Legislature jurisdiction of the apportionment of internal-revenue taxes and to modify the existing rule of apportionment so as to require that annual allotments to provinces and municipalities shall be 28 per cent of the total, but not less than the allotments of 1909, whereas the present law allots to them 40 per cent of the total but not more than was allotted in 1909. This will give to the provinces and municipalities participation in future increases.

That this act might receive the affirmative approval of Congress necessary to make it effective, the President, by his message of April 30, 1912, transmitted it to the Senate and House of Representatives, neither of which, it appears, took any action thereon during the last session further than to refer it to committees. While it is therefore in the nature of pending legislation, it is not the subject of any bill or resolution so far introduced. Since congressional approval of this action of the Philippine Legislature means merely to return to that body jurisdiction properly pertaining thereto, delay in approving the measure must operate to some extent in derogation of the powers of the insular legislature and produce an effect contrary to the purpose of Congress as expressed in the law quoted. It is therefore recommended that a bill or resolution to accomplish the purpose desired be introduced and its passage urged during the present session of Congress.

INCREASE OF AMOUNT OF LAND THAT MAY BE HOMESTEADED AND AMENDMENT OF LAW GOVERNING MINING CLAIMS.

In the last report of this bureau legislation was recommended for—

(1) Increase of amount of land that may be homesteaded from 16 hectares (39.5 acres) to 50 hectares (123.5 acres), and the amount of land that may be sold to an individual from 16 hectares to 500 hectares (1,235.5 acres), and authority to give free title to those who have occupied lands, within the limit of 50 hectares, for five years and cultivated it for three years prior to filing petition for title. There are some 60,000,000 acres of public lands in the Philippines, 20,000,000 of which are classed as agricultural lands. One immediate need of the islands is agricultural development. A wise regard for the future dictates restraint in the allotment of land, but the future

plainly is not to be benefited by a total neglect of the present, and experience has shown that the existing authority is insufficient to encourage settlement and cultivation to the extent essential to present material progress. The proposed limit is well within the bounds of safety and is fully warranted by the amount of public lands awaiting disposition. This does not affect the amount of public lands that may now be sold to a corporation or association, though it is believed that even this limit, 1,024 hectares (2,530.3 acres), might wisely be reasonably increased.

(2) Amendment of existing law to admit the filing of more than one mining claim on the same vein or lode by the same person, corporation, or association; to facilitate the taking up of claims for placer mining or mines under water; and to extend the time for development of coal claims from one year to three years. There are undoubtedly mineral possibilities in the Philippines, how great is unknown and probably undiscoverable under the present restrictions. In nearly all cases such traces as have been found are in wild and inaccessible parts, and the expenses attached to transportation, even if found in paying quantities, is too great in the general case to warrant mining operations on any important scale under the limitations now imposed. As in the case of other public lands, it is believed that possible present prosperity should not altogether be sacrificed to the future.

The recommendation for the necessary legislation is renewed.

PUBLIC ORDER.

The condition of peace and good order prevailing throughout the Archipelago at the date of the last annual report has continued generally throughout the year just passed. The disarmament of the Moros was practically completed with but little serious disorder, and another temptation to rapine and bloodshed among these fanatical peoples thereby removed.

RAILROADS.

THE MANILA RAILROAD CO.

Progress in the northern (unguaranteed) and southern (guaranteed) lines of Luzon continued. At the end of the fiscal year the lines in operation, under construction, and projected were as follows:

	Northern lines.	Southern lines.	Total.
	Kilometers.	*Kilometers.*	*Kilometers.*
Lines in full operation	477.202	227.558	704.760
Lines in construction operation		14.579	14.579
Lines under construction	30.990	110.208	141.198
Lines projected	58.614	387.591	446.205
	566.806	739.936	1,306.742

Northern lines.—The extension from Dagupan to San Fernando is in operation to Aringay North, and the line from Paniqui to Tayug as far as Rosales. Construction is proceeding on both lines. Additional shop facilities are being added.

Southern lines.—The following branch lines have been put in operation for their entire length:

Manila to Cavite and Naic.
Luta to Batangas and Bauan.
Calamba to Magdalena and Pagsanjan.

The main line south is in operation from Manila to Lusacan, with work progressing toward Lucena. Active work has begun on the connecting link south of Lucena, but no final plans have been submitted to the government.

Revised plans for final location of the Benguet line extending from Aringay to Baguio have been presented to the government for approval, and construction is proceeding from both ends of the line.

THE PHILIPPINE RAILWAY CO.

Construction work has been completed on both the Cebu and Panay divisions, and no further construction is contemplated for the present. The lines in operation are:

Trackage.	Cebu.	Panay.	Total.
Length of main line ..... kilometers..	95.60	116.40	212.00
Spurs ..... do....	3.23	2.33	5.56
Sidings ..... do....	14.72	18.82	33.54
Total trackage ..... do....	113.55	137.55	251.10

The other railways in operation are:

Manila Electric Railroad & Light Co ..... kilometers..		47.4
Manila Suburban Railways Co ..... do....		9.9
Tarlac Railway Co. (not now in operation) ..... do....		20.6
Daet Tramway Co ..... do....		7.2
Insular Coal Co ..... do....		12.0
Total of all completed lines		1,034.9

POSTAL SAVINGS BANKS.

The last year witnessed a continued growth of the postal savings bank system both in number of offices and depositors, the latter increasing 24 per cent. That nearly two-thirds of the depositors are under 23 years of age shows the potential influence of these banks upon the younger generation of Filipinos.

Number of open accounts on June 30, 1912.

	Total number of accounts.	Per cent of total.
Americans	4,720	13.19
Filipinos	29,555	82.55
Europeans	886	2.48
Asiatics	590	1.64
Societies	51	.14
Total	35,802	100.00

Comparative statement, 1911–1912.

	Net deposits.	Number of open accounts.	Total banks in operation.
June 30, 1912	₱2,388,086.42	35,802	437
June 30, 1911	2,099,474.49	28,804	414
Gain during year	289,511.93	6,998	23

PHILIPPINE CURRENCY.

The Philippine coinage system has continued to afford a convenient currency, its parity with gold being assured by a gold standard fund to which all seigniorage and earnings from the sale of New York exchange, as well as interest received from depositaries, are credited. During the last few years the earnings grew so large that it was deemed wise to limit the fund to 35 per cent of the outstanding circulation, exclusive of silver certificates protected by a gold reserve. On December 8, 1911, the Philippine Legislature accordingly passed an act (No. 2083) authorizing this limitation and releasing (to June 30, 1912) from the gold standard fund a total of $1,698,513.82. The transfer of this amount to the general funds of the insular treasury was of great assistance in meeting the general needs of the government, but particularly in the construction of public works, as elsewhere shown in this report.

Moreover, the complete public confidence in the carefully protected Philippine coinage system has long made it evident that a reasonable proportion of the gold-standard fund could properly and usefully be used in some manner other than depositing it at interest with the various banks designated for that purpose. The Legislature accordingly provided, in the same act, that not more than one-half of the fund might be loaned for not exceeding 10 years to municipalities and provinces for much needed public works at 3 per cent per annum. There was also included a further provision that not exceeding one-half of the amount thus loanable might be loaned for a period not to exceed 30 months to the Manila Railroad Co. at 5 per cent interest to aid in expediting the completion of important sections of railroad on certain specified lines.

The effect of this provision for loans to municipalities and provinces is broader than appears at first sight. Heretofore in the absence of sufficient demand for secured deposits in the islands to enable the government to place more than a minor part on deposit in Manila, the greater part of the fund had been necessarily deposited in banks of the United States which furnished ample security. At the same time, owing to the active demand for money at higher interest rates, there was no established market in the islands for provincial or municipal bonds bearing low rates of interest, although the current revenues of these local governmental bodies are unequal to the needs for additional schoolhouses, markets, water systems, and other public works. This act has made available for this purpose an initial fund of about four and a half million dollars. As showing the awakening of public spirit throughout the islands, it is interesting to note

that 250 municipalities have filed applications for loans for the construction of markets, besides numerous applications for loans for waterworks, etc.

Acting within its exclusive general legislative jurisdiction over all that part of the Philippine Islands inhabited by Moros or other non-Christian tribes, the Philippine Commission has enacted the necessary legislation to make a proportion of the funds available to them.

The provision relating to loans to the railroad is important as, under the stringent regulations requiring the completion of each 20-mile continuous section before the corresponding amount of bonds can be sold, it has been difficult to finance the simultaneous construction of sections on the numerous lines or branches in such a way as to expedite their completion. The security for these loans is unquestioned and the quickening of railway construction already evidenced shows the soundness of the action taken.

The law limits the amount of coinage to ₱75,000,000, of which there has been coined a total of ₱52,205,545.07, which gives a net per capita circulation of Philippine currency of ₱6.53, or $3.27, if we estimate the present population at 8,000,000. This does not include United States currency and coin in circulation in the islands, the aggregate of which is unknown, the insular treasury holding $2,651,683.41 on June 30, 1912. This small circulation, taken in connection with the present state of trade, indicates that the time is probably not distant when steps to increase the volume of currency may become necessary.

SILVER COINAGE.

During the fiscal year ₱278,000 in Philippine silver coin and Pfs. 42,703.40 Spanish-Filipino coin were shipped to the San Francisco Mint for recoinage under the act of Congress approved June 23, 1906. The total Philippine silver coin of the first issue shipped for recoinage under this act to June 30, 1912, was ₱29,776,500. New coin was shipped from the San Francisco Mint to Manila during the year to the amount of ₱706,433.80, of which ₱60,000 were copper and the remainder silver. The total shipments of silver coin of the present standard to June 30, 1912, and the minor coinage on hand that date were:

Pesos	₱42,700,517.00
50 centavos	2,719,401.50
20 centavos	1,630,341.40
10 centavos	1,110,172.80
5 centavos	499,250.00
1 centavo	521,076.37
½ centavo	52,042.00
	49,232,801.07

PAPER CURRENCY.

During the fiscal year there were prepared by the Bureau of Engraving and Printing of the United States Treasury Department and sent to Manila, ₱1,000,000 in ₱5 notes, ₱3,000,000 in ₱10 notes, ₱4,000,000 in ₱20 notes, and ₱3,000,000 in ₱500 notes, a total of ₱11,000,000.

DEPOSITARIES IN THE UNITED STATES.

Since my last report, the United States Trust Co., of Washington, D. C., having acquired the Washington business of the International

Banking Corporation, was designated as a Philippine depositary in lieu of the latter institution. The Continental Trust Co., of Washington, D. C., also was designated a depositary, making at present 13 depositaries for the Philippine government in the United States. The deposits of the treasurer of the Philippine Islands with these depositaries on June 30, 1912, amounted to $11,446,373.34, as against $12,908,977.19 on June 30, 1911.

BONDED INDEBTEDNESS.

The bonded indebtedness of the Philippine government, including the bonded indebtedness of the cities of Manila and Cebu, has not changed since the last report. It is as follows:

	Amount.	Redeemable.	Due.
Land-purchase bonds, 4 per cent	$7,000,000	1914	1934
Public works and improvement bonds, 4 per cent	2,500,000	1915	1935
Do	1,000,000	1916	1936
Do	1,500,000	1919	1939
City of Manila sewer and waterworks bonds, 4 per cent	1,000,000	1915	1935
Do	2,000,000	1917	1937
Do	1,000,000	1918	1938
City of Cebu sewer and waterworks bonds, 4 per cent	125,000	1921	1941
Total	16,125,000		

PURCHASE OF SUPPLIES.

During the fiscal year the bureau received from the Philippine government 1,195 purchase requisitions by mail and 87 requisitions by cable, as against 1,013 and 101, respectively, for the previous year. There was disbursed by the bureau for supplies, bought for the Philippines, and for expense of purchase, shipment, etc., $1,373,689.69, as against $904,799.66 for the preceding year.

Requisitions for supplies received by the bureau from the Philippines, as well as from Porto Rico and the general receiver of Dominican customs, are executed through the agency of the bureau maintained in New York City.

DISBURSEMENTS.

Disbursements of Philippine revenues by the disbursing agent of the bureau for the fiscal year were $2,654,983.07, and the total disbursements from May 20, 1901, the date of the inauguration of the disbursing office, to June 30, 1912, amount to $41,920,320.75.

COMMERCIAL STATISTICS.

In the belief that detailed information concerning foreign trade would prove of more value than a condensed statement even at more frequent intervals, the Quarterly Summary of Commerce of the Philippine Islands has been made a semiannual publication and, under the title of "Foreign Commerce of the Philippine Islands," gives trade data in much fuller detail. While the commercial movement will be presented at intervals of six months, it is proposed in this amplified form, and by the addition of supplementary tabulations, to present something more than a trade summary in the future

and to make the publication conform more nearly to the scope of the statistical annuals of other countries.

The increased commercial activity of the Philippines, inaugurated by free trade with the United States, continued throughout the year, and the aggregate value of imports and exports for the first time exceeded a hundred million dollars.

There was an unprecedented increase in exports, and the total of $50,319,836 exceeded by more than 25 per cent the previous high values of 1910 and 1911. Imports amounted to $54,549,980, but as the increase of $4,716,258 was largely for rice and in the nature of emergency importations to meet conditions created by the disastrous drought of the year the favorable showing of the figures is subject to corresponding discount.

IMPORTS.

Imports of merchandise for the fiscal years 1899 to 1912, inclusive, were as follows:

Fiscal years.	From—		Total.
	United States.	Other countries.	
1899 [1]	$1,150,613	$11,962,397	$13,113,010
1900	1,657,701	18,943,735	20,601,436
1901	2,855,685	27,423,721	30,279,406
1902	4,035,243	28,106,599	32,141,842
1903	3,944,098	29,027,784	32,971,882
1904	4,633,216	28,587,545	33,220,761
1905	5,761,498	25,114,852	30,876,350
1906	4,333,893	21,465,373	25,799,266
1907	5,155,359	23,630,496	28,785,855
1908	5,079,487	25,838,870	30,918,357
1909	4,691,770	23,100,627	27,792,397
1910	10,775,301	26,292,329	37,067,630
1911 [2]	19,483,658	30,350,064	49,833,722
1912 [2]	20,604,155	33,945,825	54,549,980

[1] Aug. 20, 1898, to June 30, 1899.
[2] Figures for 1911 and 1912 include Government supplies and railway free entries.

Imports of foodstuffs amounted to about twenty million dollars, or five million more than in 1911, but while rice and wheat flour were leading items of increase in this important branch of trade, a striking feature was larger values in most classes of foodstuffs. Reduced rice production, which was general throughout the East and resulted in famine prices in the opening months of the year, was also experienced in the Philippines, and required active governmental measures there as well as in other countries to cope with the situation. The Philippine government became a large purchaser of foreign rice in order to control the rapid advance in price, while elsewhere it was found necessary to place restrictions upon exports. With the marketing of the new crop the situation was somewhat relieved, but prices continued high, while importations continued in increasing volume down to the end of the year, resulting in a value of $10,569,949—the largest sum ever paid for rice except in 1904—while the average price exceeds all previous records during American occupation. Prices were favorable for the substitution of flour to meet the rice shortage, and American flour found a materially larger market in the Philippines.

Imports of beef cattle as well as draft cattle fell below the figures of 1911, and stringent quarantine restrictions, with a view to checking

the spread of disease, influenced the trade movement. The practical prohibition of Australian cattle, which was a feature of the previous year's figures, was modified to the extent of providing for local slaughter under isolated conditions, and a regular trade developed from this quarter. China-coast cattle continued to be excluded, although the Hongkong authorities made overtures toward the end of the year for the restoration of this large and profitable trade of the past; while French Indo-China, as heretofore, furnished the bulk of imports of both carabao and other cattle, although this source was also in a measure affected by quarantine regulations. Australian frozen beef profited by these conditions, and was imported in considerably larger quantities, while the demand for American canned beef surpassed by far all previous records.

In the fiber and textile trade, which ranks second to foodstuffs in importance, silk maintained the general upward movement of recent years, and the minor values under miscellaneous vegetable fibers and wool were without change, but the unprecedented ten million dollar total in the cotton trade of 1911 was not repeated, and this decline, confined generally to the piece goods trade, was the most important reduction in the import figures for the year. Cotton textiles declined from $7,128,605 to $5,876,813. The six million dollar iron and steel trade was a nominal increase over the figures of 1911, while mineral oils established a new high record with a value of over a million and a half, and coal imports were materially less.

Imports from the United States were valued at $20,604,155, against $19,483,658 in 1911, or 38 per cent of the total against 39 per cent in that year. In the reduced purchases of cotton textiles American goods suffered less than those of other countries as a whole and comprised more than half this trade. Imports of iron and steel were over two-thirds of American origin, and the larger mineral oil trade of the year was almost wholly from the United States.

EXPORTS.

Exports of merchandise for the fiscal years 1899 to 1912, inclusive, were as follows:

Fiscal years.	To—		Total.
	United States.	Other countries.	
1899[1]	$3,540,894	$8,826,018	$12,366,912
1900	3,522,160	16,228,908	19,751,068
1901	2,572,021	20,642,927	23,214,948
1902	7,691,743	16,235,936	23,927,679
1903	13,863,059	19,256,840	33,119,899
1904	11,102,775	19,147,852	30,250,627
1905	15,668,026	16,684,589	32,352,615
1906	11,579,411	20,337,723	31,917,134
1907	12,079,204	21,634,153	33,713,357
1908	10,323,233	22,493,334	32,816,567
1909	10,215,331	20,778,232	30,993,563
1910	18,741,771	21,122,398	39,864,169
1911	16,716,956	23,061,673	39,778,629
1912	21,517,777	28,802,059	50,319,836

[1] Aug. 20, 1898, to June 30, 1899.

The increase of ten and a half million dollars in exports was chiefly due to greatly increased quantities of copra marketed at increased

prices, a larger output of sugar, and an improved cigar trade. Copra prices further advanced and established another high record in the year's average, while the quantity exported increased from 113,775 to 166,667 long tons. Of the four great export staples of the islands, copra was the latest to develop into prominence, and it has been characterized by rapidly growing importance in the past few years. With a value of $16,514,749 in 1912, it took for the first time foremost place in Philippine exports, with an increase of $6,615,292 for the year.

Manila hemp, which heretofore has held front rank, continued to suffer from the low prices prevailing in recent years, and exports declined from 163,033 to 151,554 long tons, though there was a marked improvement in prices in the latter part of the year, and the reduced quantity yielded a slightly greater return to the industry than the larger output of 1911.

The average export price of sugar was a little higher than in the previous year, while the quantity increased from 147,016 to 183,077 long tons, valued at $10,400,575. The large remainder of the old crop of 1910–11 was marketed too early to obtain the full benefit of high prices created by depleted stocks and the shortage in the European beet crop during the closing months of the calendar year 1911. The new crop, which was seriously affected by the drought, moved slowly under declining prices and little demand, and large quantities were reported held in the warehouses of Iloilo at the close of the year. This is attributed to the lack of interest taken by the American market in the Philippine product, even though duty free, when brought into competition with a record-breaking output and abundant supply of near-by, high-grade Cuban sugar. The year has witnessed the installation of the first modern mills, capable of producing 96° centrifugals, and the recent market experience serves to show the importance of raising the standard of Philippine sugar if it is to get the full benefit of free trade.

Exports of manufactured tobacco did not differ materially from the figures of 1911 in either quantity or value, but greatly increased activity was shown in the cigar trade, due to the steady recovery in the American demand from the serious depression following heavy shipments of the first year of free trade. This recovery was manifest in the closing months of the previous year, and during 1912 grew from a monthly trade of about two and a half million to seven and a half million, with shipments during the year aggregating sixty-eight million, against twenty-three million in 1911 and eighty-four million in 1910. The cigar trade of other countries remained close to the million-dollar average of former years, and the average price was less than half that of the American trade.

Exports to the United States amounted to $21,517,777, an increase of nearly $5,000,000 over 1911. Sugar was the leading item, with a value of $9,142,833. Manila hemp, which heretofore has held first place in American purchases, amounted to $7,751,489. Shipments of copra to the United States doubled in value and amounted to $2,339,144, but were a relatively small part of this growing trade, which has from the first found its best market in the great vegetable-oil manufacturing center of Marseille. Leaf tobacco shipments were made to only a nominal value, but cigar exports to the United States exceeded in value those to all other countries combined. The third

year of free trade shows that 72,000,000 cigars and 159,000 tons of sugar found an American market, leaving a considerable margin still for trade development up to the limit of 150,000,000 cigars and 300,000 tons of sugar given entry into the United States.

INSULAR RECEIPTS AND DISBURSEMENTS.

The Philippine Government continued self-supporting during the past year, as it has been since its organization. The following comparative statement of insular receipts and disbursements of the Philippine Islands, exclusive of all items of a refundable character, covers the fiscal years ended June 30, 1911, and June 30, 1912, expressed in United States currency:

	Fiscal year 1911.	Fiscal year 1912.
CREDITS.		
Balances from prior years	$6,394,793.56	$8,239,312.93
Revenues:		
Customs	8,272,397.78	8,908,123.64
Internal	4,134,876.06	4,729,710.67
Miscellaneous	315,486.38	287,488.56
Surplus—gold-standard fund		1,698,513.82
Total revenues	12,722,760.22	15,623,836.69
Other receipts	54,887.62	
Supplies	2,755,431.08	
Total credits	21,927,872.48	23,863,149.62
DEBITS.		
Expenditures:		
Bureaus and offices	8,318,051.56	9,638,369.80
Miscellaneous	718,232.32	381,496.15
Fixed charges	1,609,399.01	1,389,931.47
Aid to provinces	143,299.50	144,655.00
Public works	2,899,577.16	3,338,963.85
	13,688,559.55	14,893,416.27
Supplies transferred and dropped		626,492.66
		15,519,908.93
Surplus:		
Cash	3,933,338.69	3,793,632.00
Supplies	2,755,431.08	2,657,344.03
Other	[1] 1,550,543.16	1,892,264.66
Total debits	21,927,872.48	23,863,149.62

[1] This item is $3,700 less than shown in our report for 1911 being the result of an adjustment of an error in the surplus account for that year.

PHILIPPINE LEGISLATURE.

The last regular session of the second Philippine Legislature, which is composed of the Philippine Commission as the upper house and the Philippine Assembly, whose members are chosen by popular vote, as the lower, continued with the preceding sessions to confirm the wisdom of the grant of a representative legislative assembly to the Filipinos, but continued also to reveal the importance of the checks imposed against ill-advised legislation on the one hand and against attempt to block necessary legislation on the other. Generally the relations between the two houses were harmonious and considerable important constructive legislation was enacted. Nevertheless it should be recorded that some proposed legislation plainly unwise was prevented from becoming law only by the refusal of the Philippine Commission to concur, while the failure to pass a general appropriation bill showed the wisdom of the provision in the organic act automatically continuing the preceding appropriations in this emergency.

As constituted now, the Philippine Legislature is filling an important place in training the Filipino leaders in what Mr. McKinley well called "the science of self-government," and in showing how far legislative control may be extended without serious injury to the peoples of the islands.

EDUCATION IN THE PHILIPPINES.

In 1909 the Philippine Commission reported that:

> But one-fourth of the children of school age are being instructed. There was some agitation on the part of the Assembly for the passage of a law for compulsory attendance upon school. * * * It was not accepted by the Commission on the ground that * * * it would be premature to pass any law for compulsory attendance at schools of children whom we were without funds to educate.
>
> In case Congress is disposed to help the Philippine Islands in the matter of education and push the work faster than the insular treasury can stand, we shall be glad to see a considerable annual appropriation made for education from the National Treasury. An additional amount of $2,000,000 annually could be spent with great advantage to the islands.

In 1910 and again in 1911 the Commission recommended such an appropriation by Congress, but this bureau has never before directly invited attention to this matter, through the belief that favorable action by Congress in this respect is at present unlikely, as well as because it is not fully convinced of the advisability of the action recommended. The serious nature of the struggle in the Philippines to extend education among the masses of the Filipinos and the tremendous drain on the insular revenues that must follow before wide accomplishment can be obtained is appreciated, as well, of course, as the desirability of spreading education as rapidly as possible. Nevertheless, congressional assistance of this kind would break the record heretofore maintained by the Philippine government of supporting itself without financial assistance from the home Government, and it might furthermore lead to dependence upon this source of revenue for the spread of education and result in complications of a more or less serious character if later this assistance were denied. It is estimated that probably one-third of the children of school age are now being afforded opportunities to acquire at least an elementary education; and while this leaves a vast number still to be reached, many of whom must pass their whole lives without the benefits of education, it is of no less importance that progress along other lines contribute simultaneously with the advance in learning to raising the standards of living in the Philippines. Improved sanitary conditions, new means of communication that will open up regions impracticable to reach now, and other public works are not only essential on their own account but will permit educational facilities to be supplied where it is impossible to furnish them now except at unwarranted expense.

While, therefore, not concurring in this suggestion of the Philippine Commission, the suggestion itself becomes an additional argument for the increased limit on bonded indebtedness for public works elsewhere urged. With a just share of the public works a charge, as it should be, against the future, it is believed that the proper demands of the present in the extension of education can and should be met by the Philippine government itself.

Philippine standards of living are only to be raised and Philippine progress generally to be encouraged by industrial development

of the Filipino peoples. The Philippine government has well recognized this, and a notable feature of its educational program is the opportunities it affords for vocational instruction. There is now an enrollment of about 450,000 Filipino students in industrial courses, and the opportunities offered generally for this important instruction compare favorably with opportunities for such education in the United States.

ENGLISH—A COMMON LANGUAGE.

Another feature of prime importance in the educational progress of the Filipinos is the rapid spread of the English language.

The extension of English has not been due to a mere American pride in our own tongue, but to the facts that no other language could offer any hope of becoming the common language of the islands, nor afford such practical benefits even could it be substituted therefor. It is well understood that under existing conditions neither Spanish nor any of the various native languages or dialects could hope to become a common means of communication even within the Philippines, and much less between the Philippines and other countries, while English is not merely now well advanced throughout the Archipelago but is an ordinary commercial language of much of the East. At least three million Filipinos have now had some instruction in this tongue, and to-day more natives speak and write some English than speak and write any other language. English has long been the official language in the Philippines outside of the courts, and under existing law will become the official language of the courts on January 1, 1913. Some misunderstanding has resulted from this fact, and another attempt was made during the last Philippine Legislature to postpone the date when this law should become effective. Fortunately it failed. Any further postponement must retard the spread of English, while its adoption as the "official" language will work no hardship on those lacking knowledge of it, since the use of any language is necessarily permitted where English is not known. The hope of developing any real idea of nationality among the Filipino peoples in the future lies more probably in the spread of a common language than in any other one thing, and English offers the only hope to be raised in this respect.

PORTO RICO.

GENERAL CONDITIONS.

For the third successive year exceptionably notable progress, commercial and industrial, is reported from Porto Rico. In his annual report for the year ending June 30, 1912, Gov. Colton states:

> The advance made during the year has been more general, marked, and important than that of any previous 12 months in the history of the island, either before or since American occupation.

Eighty-seven per cent of the external commerce of the island for the year was with the United States, its purchases of American goods being exceeded by only 11 countries of the world. The output of all agricultural products was substantially increased, methods of farming have been markedly improved, and the acreage of crops extended, while the conditions for continued improvement remain favorable.

Sugar continued in the place of first importance as an article of export, the quantity reaching 367,000 tons during the year, five times that in 1901.

The number of cigars manufactured was 14 times greater than 11 years before, 170,000,000 being shipped to the United States, and less than one-fourth of the tobacco crop being shipped in the leaf.

The shipments of fruit from the island were valued at $2,377,762, and cooperative efforts to improve methods of packing and marketing have produced marked results.

The long period of depression in the production of coffee following the destructive hurricane of 1899 seems to be passing, as the crop of 1912 was the largest ever known in Porto Rico. The value of the coffee sold abroad during the year was $6,754,913. This industry is being extended throughout the mountains of the island, the soil and climate of which are especially adapted to the successful culture of the highest grade of coffee. Heretofore it has been practically unknown to American consumers, but is now being introduced by the Commercial Agency of the Government of Porto Rico, 569 Fifth Avenue, New York City. The insular government has taken an active interest in this matter, believing that consumers need only to know that one of the best coffees produced is grown on American soil to bring about a steady demand for this product.

The external commerce of the island increased approximately $14,000,000 over 1911, or 17 per cent. The United States purchased Porto Rican products to the value of $42,873,401, while Porto Rico imports from the home markets reached $37,424,545.

Imports and exports.

Fiscal years.	Imports.	Exports.	Total.
1901	$8,918,136	$8,583,967	$17,502,103
1902	13,209,610	12,433,956	25,643,566
1903	14,449,286	15,089,079	29,538,365
1904	13,169,029	16,265,903	29,434,932
1905	16,536,259	18,709,565	35,245,824
1906	21,827,665	23,257,530	45,085,195
1907	29,267,172	26,996,300	56,263,472
1908	25,825,665	30,644,490	56,470,155
1909	26,544,326	30,391,225	56,935,551
1910	30,634,855	37,960,219	68,595,074
1911	38,786,997	39,918,367	78,705,364
1912	42,926,473	49,705,413	92,631,886

Exports—Sugar, cigars, and coffee.

Fiscal years.	Sugar.	Cigars.	Coffee.
1901	$4,715,611	$306,115	$1,678,765
1902	5,890,302	1,549,235	3,195,662
1903	7,470,122	1,753,795	3,970,574
1904	8,690,814	1,460,496	3,903,257
1905	11,925,804	2,152,051	2,141,009
1906	14,184,667	3,074,226	3,481,102
1907	14,770,682	4,241,410	4,693,004
1908	18,690,504	3,414,140	4,304,609
1909	18,432,446	4,383,893	3,715,749
1910	23,545,922	4,480,030	5,669,002
1911	24,479,346	5,355,223	4,992,779
1912	31,554,063	5,086,711	6,754,913

Value of fruit exports.

Fiscal years.	Oranges.	Pine-apples.	Canned pine-apples.	Coconuts.	Grape-fruit.	Other fruits.	Total.
1901	$84,475	(1)	(1)	$8,334	(1)	$16,992	$109,801
1902	51,364	(1)	(1)	12,720	(1)	9,898	73,982
1903	230,821	(1)	(1)	326	(1)	61,956	293,103
1904	352,646	(1)	(1)	(1)	(1)	81,214	433,860
1905	125,422	(1)	(1)	(1)	(1)	130,478	255,900
1906	295,633	$27,826	$42,186	129,793	(1)	7,420	502,858
1907	469,312	64,831	63,519	174,957	$7,586	3,737	783,942
1908	630,720	172,779	98,203	206,704	44,535	11,320	1,164,261
1909	401,912	442,780	117,830	204,498	76,310	18,154	1,261,484
1910	582,716	555,044	106,587	218,870	162,749	9,851	1,635,817
1911	703,969	641,291	149,744	258,168	309,698	11,123	2,073,993
1912	584,414	684,774	258,671	308,883	525,048	15,972	2,377,762

[1] Shipments included under "Other fruits."

The assessed value of property in Porto Rico increased 9 per cent, reaching a total of $178,275,000, which is practically double the assessed value of 1905.

The total net revenue receipts of the insular government—$6,665,348.55—were the largest of any year in its history, and notwithstanding larger disbursements required by the extensions of the public service, the available cash balance in its treasury increased nearly 50 per cent. At the end of the year there remained uncollected only six mills of each dollar of taxes assessed. On June 30, 1912, the total bonded indebtedness of Porto Rico, less sinking-fund accumulations, was $4,139,760.40, or $3.70 per capita and 2.5 per cent of the assessed valuation of property.

A comparative statement of all receipts and disbursements of Porto Rico for the fiscal years 1911 and 1912, expressed in United States currency, follows:

Revenues.	Fiscal year 1911.	Fiscal year 1912.
Customs	$1,065,998.95	$1,180,592.90
Internal	2,571,450.02	2,778,231.32
Miscellaneous	349,296.87	410,339.73
Total revenues	3,986,745.84	4,369,163.95
Other receipts:		
Repayment of loans to municipalities	79,659.81	74,974.82
Repayment of loans to school boards	38,943.41	35,098.13
Repayments to appropriations and transfers	324,054.70	956,986.53
Total receipts	4,429,403.76	5,436,223.43
Expenditures:		
Legislative	60,596.60	58,673.37
Executive	3,137,017.42	4,022,807.95
Judicial	443,366.36	461,383.91
Miscellaneous	153,268.01	127,687.61
Total expenditures	3,794,248.39	4,670,552.84
Other disbursements:		
Loans to municipalities	19,200.00	32,700.00
Loans to school boards	17,385.86	294.60
Repayments to appropriations and transfers	95,591.31	152,122.20
Total disbursements	3,926,425.56	4,855,669.64

EDUCATION.

In 12 years of American administration the number of pupils enrolled in the public schools has increased from 20,000 to 160,657. In these years more than $11,000,000 has been expended upon the insular educational system, while instead of only 1 building erected for school purposes, as was the case prior to 1899, there are now 1,168 such buildings. Nevertheless, while the system has been expanded as rapidly as possible, not half of the Porto Rican children of school age can be cared for with the present classroom accommodations and force of teachers.

INSULAR LEGISLATION.

The Porto Rican Legislative Assembly legislatively made possible the institution of a vastly improved sanitary service, and so amended the election laws as to insure the secrecy of the ballot, to require that delegates elected be residents or taxpayers within the districts from which chosen, and to provide minority representation in the House of Delegates, as well as to require a new registration of voters. A bureau of labor was also established, with authority to investigate controversies and exercise its good offices for the maintenance of satisfactory relations between employers and employees.

The Sixth Legislative Assembly convened January 8, 1912, and as some matters of importance had not been disposed of within the 60-day limit, a special session was immediately called, the Legislature adjourning finally March 14. Eighty-five laws, which were duly reported to Congress by the Governor, were enacted.

HEALTH AND SANITATION.

Maj. Robert E. Noble, Medical Corps of the Army, who had been engaged in the work of exterminating mosquitoes in the Canal Zone, went to Porto Rico in August, 1911, and spent six months instructing officials of the sanitation service in similar work. The result of Maj. Noble's work has been most beneficial. The prevention of typhoid fever and tuberculosis received increased attention and the campaign against anemia was continued throughout the year.

About the middle of June last bubonic plague appeared in an outlying district of San Juan. The disease was promptly discovered and positively identified four days later, when stringent measures were adopted to prevent its spread, and on the 19th its presence frankly proclaimed. The Medical Department of the Army and the United States Public Health and Marine-Hospital Service rendered important aid to the local sanitation service in the campaign for its eradication. Though a total of 30 cases and 11 deaths were reported to June 24, only sporadic cases have appeared since the close of the fiscal year, while the last known case was reported September 11.

PUBLIC WORKS.

The irrigation project for the benefit of some 35,000 acres of rich land on the south side of the island has progressed sufficiently to warrant the prediction that it will be completed by the end of 1913. The last year showed also much activity in municipal improvement

work and continued progress in road work. At the end of the year there were 1,069 kilometers of macadamized roads under maintenance, while 33 important municipal improvements were either under construction or projected.

Forty-four franchises were granted during the year, including authority for intermunicipal telephone service, which, with the present Government telephone and telegraph lines, should make every point in the island accessible by wire before the end of the present year, and authority for the municipality of Ponce to erect a much-needed pier, at a cost of some $300,000.

The Legislative Assembly of Porto Rico has authorized a $500,000 bond issue for water-front improvements at San Juan. It is of particular importance, in this connection, that the dredging of the harbor of San Juan, the survey of which has already been authorized, should accompany the shore improvements, and recommendation to Congress accordingly is urged.

PURCHASES AND DISBURSEMENTS.

The bureau received from Porto Rico 471 mail and 90 cable requisitions for supplies, which were filled through its New York purchasing office, and disbursed for supplies purchased and expenses of shipment $525,407.95 of Porto Rican funds.

FEDERAL LEGISLATION.

Referring to the legislation now pending before Congress respecting Porto Rico, Gov. Colton states in his annual report:

> All of this legislation now before Congress is of importance to the welfare of the island. Especially do the people of Porto Rico so consider the citizenship bill. They have waited for more than 10 years to be admitted to American citizenship and it seemed to them during the last session of Congress that their hopes were about to be realized. It is a concession that, while entailing no new obligation or responsibility upon the people of the United States, would be of inestimable value to its recipients. It is therefore earnestly recommended that the enactment of the citizenship bill now pending in the Senate of the United States be urged at the next session of the present Congress.

Citizenship.—It is the practically universal testimony of everyone familiar with conditions in Porto Rico that the subject of the citizenship of Porto Ricans is the underlying cause of whatever political and social unrest there is in the island. The grant of American citizenship to those Porto Ricans desiring it has been repeatedly recommended by this bureau, successive Secretaries of War, and successive Presidents. It has been promised in the platforms of both political parties, and a bill for this purpose has once passed the House of Representatives. It is very much to be hoped that this grant may be legislatively authorized during the current session of Congress.

Sanitation.—While by the action of the Legislative Assembly of Porto Rico in providing an efficient and nonpartisan insular sanitary service has made Federal legislation in this direction of less importance, it is still believed that this bureau should be raised to the dignity of a department of the insular government and that the head of the department should be a member of the Executive Council of Porto Rico.

Department of Agriculture and Labor.—Similarly while the insular legislature has provided for a bureau of labor, it is still believed, in view of the importance of agriculture to the island and the number of people that must always be included there in the classification of laborers, that this bureau should properly become a department, with the head thereof a member of the executive council.

United States district court.—Among other pending legislation desirable for Porto Rico is a bill providing that a justice of the Supreme Court of Porto Rico may be designated by the Governor to act as temporary judge of the United States District Court for Porto Rico, or as a special judge thereof, during the absence of the judge of said court or his disqualification to sit in any case or cases before that court. The early enactment of this bill will help to avoid the delay, inconvenience, and expense which results now during the absence or disqualification of the one authorized.

Municipal judges.—The recommendation for Federal legislation to provide for the appointment, in lieu of election, of all municipal judges, together with their secretaries and marshals, is renewed.

Exchange of properties.—The transfer of certain property of the United States in Porto Rico for other parcels owned by the insular government was recommended in 1909 by the Secretary of War, and during the third session of the Sixty-first Congress the Senate passed a bill authorizing such transfer. This was not acted upon by the House, and the Senate again passed it in the form of an amendment to the sundry civil appropriation bill, which amendment was lost in conference. The Senate passed the measure for the third time on August 22, 1912, and it is hoped that favorable action may be taken by the House during the present session. The Legislature of Porto Rico has enacted the legislation requisite on the part of that Government to make the exchange.

DOMINICAN CUSTOMS RECEIVERSHIP.

The fifth year of the operation of the receivership under the convention of 1907 ended July 31, 1912. I regret to record, however, that the record for peace and stability maintained in the Dominican Republic during the former years of the convention and under the two preceding years of the modus vivendi was broken during the last year and, following the assassination of President Cáceres on November 19, 1911, a condition of revolution and political and social confusion resulted, which grew worse rather than better throughout the year. In the interests of peace and good order a commission, of which the undersigned was one member, has recently visited and spent several weeks in the island under the direction of the Department of State. This report, covering only the period for the receivership fiscal year ending July 31, 1912, can not properly include the latest developments, which have recently resulted in the resignation of the President of the Republic and the choice of a temporary successor, further than to afford opportunity for the expression of the hope that, through the friendly offices of this country and the changes already effected and promised, political and business stability may soon be restored.

Notwithstanding the disturbed conditions of the last year, there was no decline in trade, but, on the other hand, a decided increase in the volume of business transacted, and the convention continued to prove itself an efficient agency in the rehabilitation of the Republic's finances so long as it is followed in letter and spirit. The customs collections for the year amounted to $3,645,974.79, surpassing all previous records and showing an advance over the preceding year of $212,235.87, while the total was practically double the customs revenue of the year preceding the advent of the receivership.

The aggregate foreign trade of the Republic for the year amounted in full to $17,945,208, an increase of $837,894 over the preceding year. Of the total imports the United States supplied 60 per cent. Germany, the nearest competitor, supplied 12.68 per cent. The third year under the present tariff law has continued to show its efficiency as a revenue producer without the imposition of inequitable burdens.

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CIVIL OFFICERS IN THE INSULAR POSSESSIONS.

Recommendations have been made in the annual reports of this bureau for several years that action by Congress be sought to provide for the retirement, after 10 or more years of satisfactory service, of certain classes of American civil officers of the Philippine government. It grows, and must continue to grow, more difficult to find qualified Americans who, under the conditions, feel that they can sacrifice an important part of their lives in the insular service unless some reasonable assurance of a livelihood, after they are compelled to leave the Tropics and return to their own country, is given. It has been estimated that expenditures under the plan suggested would probably never exceed $100,000 annually, and would be a charge against Philippine revenues, since it is the Philippines that would derive the benefits of this encouragement to efficiency on the part of Americans occupying the higher offices of the government. The recommendation heretofore made is renewed.

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Respectfully submitted.

FRANK MCINTYRE,
Brigadier General, United States Army,
Chief of Bureau.

The SECRETARY OF WAR.

REPORT OF THE PHILIPPINE COMMISSION.

MANILA, *October 8, 1912.*

SIR: The Philippine Commission has the honor to submit its thirteenth annual report, covering the fiscal year ending June 30, 1912.

LEGISLATION.

EXCLUSIVE LEGISLATIVE JURISDICTION OF THE COMMISSION.

Acting within its exclusive legislative jurisdiction over all that part of the Philippine Islands inhabited by Moros or other non-Christian tribes, the Commission enacted during the fiscal year 36 laws, of which the following are the more important:

An act prohibiting slavery, involuntary servitude, peonage, and the sale or purchase of human beings in the Mountain Province and the Provinces of Nueva Vizcaya and Agusan, and providing punishment therefor.

An act establishing and defining the legal rate of interest, and declaring the effect of usury upon contracts, and for other purposes, in the Moro Province, the Mountain Province, and the Provinces of Agusan and Nueva Vizcaya.

An act providing certain special proceedings for the settlement and adjudication of land titles in the Moro Province, the Mountain Province, the Province of Agusan, and the Province of Nueva Vizcaya.

An act amending act numbered two thousand and sixty-seven, entitled "An act providing for the investment of a portion of the accretions to the gold-standard fund in loans to the provinces and municipalities in the territory inhabited by Moros or other non-Christian tribes, for certain purposes, in securities authorized for the investment of funds of the Postal Savings Bank, and in interest-bearing bonds to assist in the construction of sugar centrals, and for other purposes," so as to fix the amount of the gold-standard fund created under act numbered nine hundred and thirty-eight, authorize the deposit of the amount of the excess so fixed to the credit of the general fund of the treasury, and authorize the investment of a portion of the said gold-standard fund.

An act authorizing the establishment of quarantines and regulating the movement of cattle within the territory under the exclusive legislative jurisdiction of the Philippine Commission.

An act authorizing the pasturing of horses, cattle, carabao, sheep, and goats on public lands in the Mountain Province, the Moro Province, Nueva Vizcaya, and Agusan.

An act appropriating funds for the construction of wireless telegraph stations in that part of the Philippine Islands inhabited by Moros or other non-Christian tribes, provided a like amount shall be appropriated by the Congress of the United States and made available for use in connection with the money herein appropriated.

AS A CHAMBER OF THE PHILIPPINE LEGISLATURE.

The second regular session of the Second Philippine Legislature convened on October 16, 1911, and continued in session until and including February 1, 1912. A special session was called by proclamation of the Governor General for the days February 2 to 6, 1912, inclusive. These were the only sessions of the Legislature held during the fiscal year.

During these sessions there originated in the Commission as a chamber of the Philippine Legislature 69 bills, of which 52 were passed by the Commission and sent to the Assembly. During the same period there were considered by the Commission 181 bills which originated in the Assembly. The total number of bills finally agreed upon by both Houses and enacted into law was 86, of which 17 originated in the Commission and 69 in the Assembly. Of these laws the following are the more important:

An act to fix the amount of the gold-standard fund, created under act numbered nine hundred and thirty-eight, authorizing the deposit of the excess of the amount so fixed to the credit of the general fund of the treasury, and authorizing the investment of a portion of the said gold-standard fund.

An act to provide for the collection and apportionment between the insular, provincial and municipal governments of taxes paid by the grantees of franchises, their lessees, successors or assigns, on the gross earnings or receipts from the business covered by the law granting the franchise or any amendment thereof

An act relating to contracts of personal service and advances thereunder, and providing punishment for certain offenses connected therewith.

An act amending act numbered eight hundred and seventeen by changing the method of appointment of locust boards and by defining the relation of the bureau of agriculture to the locust boards, and appropriating a sum of money for the purposes of said act, and for other purposes.

An act providing for the confinement of insane persons in Government hospitals or other institutions for the insane, and for the appointment of a board of physicians to inquire into the mental condition of persons alleged to be insane, when the evidence presented is not satisfactory to the court, or when there exists a reasonable doubt as to the condition of any patient confined in a hospital for the insane.

An act authorizing Mauro Prieto and associates to establish a mortgage bank under certain conditions.

An act providing for the apportionment and disposition of internal-revenue taxes collected in the Philippine Islands from July first, nineteen hundred and twelve.

An act concerning warehouse receipts.

An act to prevent the introduction into the Philippine Islands of plant diseases and epidemics.

An act to provide a system for the appropriation of public waters, and for the determining of existing rights thereto; for the public registration of all water rights; for the creation and use of water power; for investigations for and the construction, maintenance, and operation of irrigation systems by the Government of the Philippine Islands; for the repayment of money expended therefor; for the construction, maintenance, and operation of irrigation systems by private persons; for the inspection and regulation of all works pertaining to the use of water; and providing penalties for its violation; and for other purposes.

An act authorizing the granting of revocable licenses to construct and operate tramways on public roads, and for other purposes.

An act to regulate motor vehicle traffic in the Philippine Islands, to provide for the registration of motor vehicles and the licensing of operators, and to require all vehicles on highways to carry lights, and for other purposes.

An act creating a commission to secure, organize, and make an exhibit of Philippine products, manufactures, art, ethnology, and education at the Panama-Pacific International Exposition to be held at San Francisco, California, in the United States, in nineteen hundred and fifteen, making an appropriation therefor, and for other purposes.

An act to provide for the reorganization, government, and inspection of the municipal police of the municipalities or provinces and subprovinces organized under act numbered eighty-three.

The following are some of the important matters considered by the Legislature, but which failed of final passage:

An act providing certain special proceedings for the settlement and adjudication of land titles.

An act providing for the reorganization of the courts of first instance.

An act creating the bureau of land registration, and for other purposes.

An act authorizing the establishment of an Agricultural Bank under the guaranties authorized by the act of Congress of March fourth, nineteen hundred and seven.

An act defining habitual criminals and providing additional punishment for the same.

An act prohibiting slavery, involuntary servitude, peonage, and the sale or purchase of human beings in the Philippine Islands, and providing punishment therefor.

An act authorizing the Governor General to sell the real property of the Government of the Philippine Islands known as the ice plant for a sum not less than two million pesos, to give to the purchaser a good and sufficient title to said property, and for other purposes.

An act to amend sections fifty-four and one hundred and fifty-two of act numbered fourteen hundred and fifty-nine, known as the "corporation law" (regarding insurance companies).

An act regulating the organization of life insurance corporations, defining their powers, fixing the duties of directors and other officers thereof, prescribing conditions under which said corporations may transact business, prescribing rules under which foreign life insurance corporations may transact business in these islands and repealing all acts or parts of acts in conflict or inconsistent with this act, and for other purposes.

An act creating the office of shipping commissioner, defining his duties, regulating the shipment and discharge of seamen in domestic vessels and the adjudication of wage disputes in certain cases.

An act further amending section twelve of act numbered one hundred and ninety, entitled "An act providing a Code of Procedure in Civil Actions and Special Proceedings in the Philippine Islands," as amended, by providing for the continuation of the Spanish language as the official language of the courts until the first day of January, nineteen hundred and seventeen, and for other purposes.

An act changing the penalty for the crimes of falsification of documents, as defined in chapters four and five of the Penal Code of the Philippine Islands.

An act on marriage and divorce.

An act providing for the organization of agricultural colonies at uninhabited points in the Philippine Islands under the direction of the bureau of labor and appropriating funds for that purpose.

An act to authorize the creation of rural associations subsidized by the government in each of the municipalities and townships of the Philippine Islands, for the purpose of fostering rural industries and agricultural production, creating for that purpose a special fund in the insular treasury that shall be derived chiefly from customs duties on imported rice, or, in default thereof, from the gold-standard fund, or from the general fund in the insular treasury.

An act prescribing the procedure in all cases of detention or arrest of male offenders under twenty-one years and of female offenders under twenty-five years of age, as well as the form of trial and criminal proceedings against them; containing also provisions relative to the correction of minors rebellious to paternal authority and the detention or arrest of older persons.

An act making a reimbursable appropriation of one million pesos to aid in the establishment of banks in the Provinces and important municipalities of the Philippine Islands, under certain conditions and limitations, and for other purposes.

An act making appropriations for sundry expenses of the insular government for the fiscal year ending June thirtieth, nineteen hundred and thirteen, and other designated periods.

An act establishing and defining a legal rate of interest and declaring the effect of usury upon contracts.

An act making appropriations for public works.

The acts passed by the Commission and the Legislature during the fiscal year are numbered 2066 to 2187. Certified printed copies of all of these have heretofore been furnished.

The Legislature having failed to pass the appropriations for the current expenses of the government for the fiscal year 1913, section 7 of the act of Congress of July 1, 1902, became operative and the expenses necessary for the support of government are being paid in accordance with the provisions of said section.

COMMERCIAL DEVELOPMENT.

The year has been marked by a healthy advance in commerce throughout the islands. The value of imports and exports has amounted to ₱209,739,632, as compared with ₱179,224,702 for 1911, an increase of 17 per cent. There has been a considerable growth in the value of domestic products exported, both in quantity and quality, yet the imports still show an excess over the exports of ₱8,460,288. Although the balance of trade is against the islands for the year, it is a large reduction from that of 1911, and if the extraordinary increase in the rice importations, amounting to ₱8,018,638, be not considered the imports and exports would be almost equal.

The increase in exports of ₱21,082,414 was largely due to copra. For the first time since American occupation copra has moved to the head of the list of exports and hemp has dropped to second position. Sugar and cigars retain about their same position. The following figures of the four principal exports in 1911 and 1912, showing the percentage of the total value of the exports, may be of interest:

Exports of 1911 and 1912.

	1911		1912	
	Value.	Per cent of the total value.	Value.	Per cent of the total value.
Hemp	₱32,282,680	40.58	₱32,567,020	32.36
Copra	19,798,914	24.9	33,029,498	32.8
Sugar	16,028,720	20.15	20,801,150	20.67
Cigars	3,401,424	4.27	5,320,122	5.29

While hemp fell in quantity it increased in value, showing a decrease in weight of 11,603 tons and an increase in value of ₱284,340.

The exports of sugar continue to increase, 161,783 tons valued at ₱18,285,666 having been exported as compared with 128,926 tons valued at ₱14,289,510 in 1911. Though this year shows an increase, it is entirely due to large shipments of the 1911 crop in the early part of the year and can not continue unless a better grade of sugar is offered to the markets of the world. During the last months of the fiscal year 1912 the Philippine market was stagnant, for in spite of a good crop, the sugar was practically all stored in Iloilo, and there was no demand for it. This state of affairs precipitated a crisis in our chief sugar district. The sugar-planting season had begun, the banks were unwilling to carry longer the farmers who had received advances on the sugar which was not yet sold, and refused to advance money on the coming crop until they had realized on the 1912 crop. The situation gradually became better, and at the present writing the crop has begun to move to the market. The reason for such a situation being possible is that the Philippine or "muscovado" sugar, which has but a low percentage of purity, is the last sugar that is bought by the American refineries. The Cuban, West Indian, and Louisiana crops, and the beet-root sugar are all preferred to the Philippine crop. We, therefore, have a market in America only when there is a lack of other available sugar, as occurred in the previous year. If the Filipino hacenderos desire to avail themselves of the American market and not to ruin the sugar industry in the islands, they must organize and construct, or encourage foreign capital to construct, modern sugar centrals where high-grade sugar, for which there is a practically unlimited market, can be manufactured.

The slump in the cigar trade with the United States, mentioned in the last report, seems to have ended, 71,973,000 cigars having been shipped to the United States as compared with 27,936,000 in 1911. With the cooperation of the Manila Tobacco Association, the collector of internal revenue has promulgated rules and regulations governing the shipment of cigars to America. These rules restrict the shipment of cigars so that only cigars of high-grade quality are placed on the market. The increasing demand for the Philippine cigar in the United States is the best evidence that these regulations are assisting the tobacco industry.

EVIDENCES OF COMMERCIAL AND FINANCIAL ACTIVITY.

The following figures are interesting as showing the increase in trade with the United States since the passage of the Payne tariff bill (1909), the increase in trade with other countries, and the increase in both business and trade during the same period:

Fiscal year.	Trade with foreign countries.	Trade with the United States.	Total trade.
1909	₱87,772,324	₱29,905,556	₱117,677,880
1910	94,387,348	59,183,832	153,571,180
1911	105,959,292	73,265,410	179,224,702
1912	126,959,188	82,780,444	209,739,632

Business of the Philippine Islands upon which is levied a tax of one-third of 1 per cent.

Fiscal year.	Amount of business.
1909	₱380,408,894
1910	457,610,200
1911	533,650,738
1912	574,168,706

These figures show a total increase in the three years of ₱189,501,874 in trade and ₱424,202,962 in business in the Philippine Islands. When the Payne tariff bill went into effect it was believed that there would be a marked decline in the customs receipts owing to the free American market which would tend to cut into the foreign markets, from which alone goods are received on which customs duties are paid. The contrary has proved to be the case. Customs receipts have advanced steadily the past three years, amounting to ₱16,572,147 in 1910, ₱17,357,620 in 1911, and ₱18,695,295 in 1912. Not only do the merchants import more and more from the free markets of the United States every year but with increasing prosperity the purchasing power of the people has become so much greater that they can afford to increase their purchases of foreign dutiable goods.

THE GOLD STANDARD FUND ACTS.

The advisability of a change in the gold-standard fund was mentioned in the last report of the Philippine Commission. This matter was brought to the attention of the Legislature by the message of the Governor General last October, and resulted in the passage of two acts, Nos. 2083 and 2088, which are known as the gold-standard fund acts. By Act No. 2083 the gold standard fund is fixed at a sum equal to 35 per cent of the money of the Philippine Islands in circulation and available for that purpose, exclusive of the silver certificates in circulation protected by the gold reserve. It provides also that 50 per cent of the gold-standard fund thus constituted may, with the prior approval of the Governor General, be invested by the insular treasurer in loans, with interest at 3 per cent for provincial and municipal public works, for periods not exceeding 10 years, and that one-half of said 50 per cent may also, with the prior approval of the Governor General, be invested in loans, at 5 per cent interest to the Manila Railroad Co. to assist in the construction of the lines in southern Luzon. Act No. 2088 makes similar provisions, the interest, however, on loans to the Manila Railroad Co. for lines in the Mountain Province being fixed at 4 per cent instead of 5.

By these acts ₱2,751,897.73 were at once transferred to the general fund of the treasury as cash available for appropriation and approximately ₱9,000,000 were made available for loans. Contracts were signed at once by the Governor General and the president of the Manila Railroad Co., insuring the speedy completion of the southern lines connecting Albay with Manila and the completion of the Baguio line from La Union to the capital of the subprovince of Benguet. By the end of the fiscal year ₱2,013.700 of this fund had been loaned to Provinces and municipalities and ₱200,000 to the Manila Railroad Co.

THE PORT OF MANILA AND THE PORT DISTRICT.

The increase of trade in the Philippine Islands during the past year has been noted in another portion of this report. If the islands are to get the full share of prosperity which the fertility of their soil

and the abundance and variety of their natural resources warrant, everything must be done in the near future to make the transportation of freight to and from the islands as cheap as possible. It is of the utmost importance that the present hindrances to trade in the shape of costly delays of shipping, frequent rehandling of products, etc., be eradicated. The government, in the past, has done much to remedy these defects, not only in the port of Manila, but in the other two important ports of the islands, Cebu and Iloilo. Cebu is now unique among the island ports in having a wharf at which ocean-going vessels can tie up with railroad connection at the water's edge. If the sugar industry in the Negros and Iloilo districts is to bring to the islands the prosperity which it warrants, the port of Iloilo must be improved and modern wharfs must be placed there at which ocean-going vessels can dock and the sugar can be shipped without the necessity of lightering.

The most important problem, however, is the improvement of the port of Manila, as Manila is by far the largest export and import port in the islands, 77 per cent of the islands' trade going through it each year. On the improvement of the port, ₱11,569,677 have already been spent in the construction of breakwaters, and the dredging to the depth of 30 feet of a deep-water harbor for the world's trade. The trade of the islands, however, is increasing far beyond the facilities which the port of Manila at present provides, and in the near future it will be of vital importance to have a further area of harbor dredged so that more vessels of deep draft can anchor there.

The filled-in land known as the port district offers to the port of Manila an unequaled chance of giving to the ships of the world the best facilites in the Far East for quick and cheap transshipment of goods. Two wharfs have already been constructed by the Government and a start has been made on warehouse construction on the filled-in land. At first it was found necessary to compel ships to come to the wharfs. Within the past year, however, they have found the advantages offered so great that it is no longer a question of compelling ships to load or unload at them but a question of which ships shall have the privilege of the use of these wharfs. There is a vital necessity for the construction of more wharfs to handle the traffic. In the past year the movement of merchants toward the port district has been marked. Previous to the fiscal year 1912 but 2 blocks available for lease to the public had been taken up; 16 blocks were reserved for the military and Marine Corps and 7 blocks have been reserved for the customhouse and other government buildings. In the past year 22 blocks have been disposed of to the merchants of Manila. In the near future the Manila Railroad will have constructed its lines across the Pasig River, into the port district and onto the wharfs. The electric railroad will circle the district and provide cheap freight distribution throughout the city. With the railroad lines completed to Albay in the south and to La Union in the north, tapping the hemp districts of Albay and Ambos Camarines, the copra districts of Tayabas and La Laguna, the rice districts of the north and the sugar districts of Pampanga, produce of the islands may be moved from the place of production to the ship's sides in Manila without break of bulk, with through bill of lading and with no rehandling. This will mean a tremendous decrease in the cost of

shipping which will benefit the islands and which should be followed by a large increase in production.

In connection with the improvement of the port of Manila, the interisland shipping trade should not be lost sight of and large improvements are necessary in the lower Pasig River and in the esteros throughout the city. To obtain the means of bringing about these most important improvements, authority to issue bonds will be necessary and it is hoped that Congress in its next session will authorize a further issuance of bonds for permanent improvements in the islands for these and other purposes.

RECOMMENDATIONS.

The commission wishes to make the following recommendations, most of which have been repeatedly urged in previous reports:

BONDED INDEBTEDNESS.

First. That the Philippine Legislature be empowered to authorize the issuance of $15,000,000 worth of bonds, to be used for public works, permanent improvements, and cadastral surveys, with the provision that not more than $2,500,000 thereof shall be sold in any one year. The argument for this recommendation may be found in the report of the Commission for the fiscal year 1911.

SCOUTS AND CONSTABULARY.

Second. That Congress, by appropriate legislation, authorize the consolidation of the Philippine Scouts and constabulary into a single homogeneous native force under control of the insular government, toward the maintenance of which the United States would pay a portion of the money now expended for maintenance of the scout organization.

RAILROAD BONDS.

Third. That Congress amend section 4 of the act of Congress approved February 6, 1905, dealing with the government guaranty of bonds issued against the construction of railroads in the Philippine Islands so that contracts of guaranty thereby authorized may be executed upon satisfactory proof of the construction of the railroad in sections of not less than 10 continuous kilometers each instead of 20 continuous miles each, as now provided.

The arguments for the following may be found in the report of the Commission for the fiscal year 1909:

EDUCATION.

Fourth. That if Congress is willing to assist, so as to expedite the accomplishment of our ends in the Philippine Islands, an annual appropriation of $2,000,000 be given, to be added to the present insular appropriation for education.

MINING LAW.

Fifth. That the law in regard to mining be amended in order to admit the filing of more than one mining claim upon a lode by the same individual or corporation to facilitate their taking up claims for

placer mines or mines under the water, and to extend the time for development of coal claims to three years.

LAND LAW.

Sixth. That the amount of land which may be acquired, owned, and used for agricultural purposes in the Philippine Islands by any corporation be extended to 6,000 hectares.

HOMESTEADS.

Seventh. That the amount of land allowed to be taken up by any one person under the homestead law be increased from 16 to 50 hectares; that the amount that individuals may purchase from the government be increased to 500 hectares; and that the amount allowed to be sold or conveyed to corporations or associations of persons be increased from 1,024 hectares to 6,000 hectares.

LAND TITLES.

Eighth. That provision be made for the government to give free titles under proper restrictions to people who have been in undisputed occupation of land for five years previous to the year 1912.

CONSTRUCTION OF PUBLIC WORKS BY MUNICIPALITIES.

Ninth. That section 66 of the act of Congress of July 1, 1902, as amended, be further amended so as to increase the kinds of public works which may be undertaken by municipalities and to authorize the Philippine government by general legislation to empower municipalities to incur indebtedness for such purposes.

QUALIFICATIONS OF ELECTORS FOR DELEGATES.

Tenth. That section 7, congressional act of July 1, 1902, be amended to provide that qualifications of electors in election of Assembly Delegates shall be the same as those now or hereafter required for municipal electors by Philippine laws, and that no person shall be eligible to election as Assembly Delegate unless he has the qualifications prescribed by law for municipal officers, is a resident of his election district, owes allegiance to the United States, and is 25 years of age.

Information regarding many matters of general interest, such as have been discussed in previous reports of the Commission, will be found in the reports to the Commission of the Governor General and the several secretaries of departments.

Respectfully submitted.

NEWTON W. GILBERT,
Acting President.
DEAN C. WORCESTER,
JOSÉ R. DE LUZURIAGA,
GREGORIO ARANETA,
JUAN SUMULONG,
FRANK A. BRANAGAN,
Members.

To the honorable the SECRETARY OF WAR,
Washington, D. C.

REPORT OF THE GOVERNOR OF PORTO RICO.

GOVERNMENT HOUSE,
San Juan, Porto Rico, September 2, 1912.

SIR: In pursuance of law I have the honor to present the following report of the governor of Porto Rico covering the fiscal year ending June 30, 1912:

INTRODUCTION.

The general conditions in Porto Rico during and at the close of the last fiscal year can not be more concisely or accurately described than by repeating the opening paragraph of the annual report for the preceding year, as follows:

> This period has been one of remarkable progress and signal achievement in both the public and private activities of the territory. At its close a greater degree of prosperity existed among the people than at any previous time; every industry was active and prosperous, furnishing employment for all who sought it; and the Government was better equipped with legislative authority to protect the interests and insure the equal opportunities of the people than ever before.

The advance made during the year under consideration, however, has been more general, marked, and important than that of any previous 12 months in the history of the island, either before or since American occupation.

Extracting from the year's record the most noteworthy and interesting features of development for the benefit of those merely interested in a general survey or as an index to the more detailed discussion of events which appears under appropriate headings in the succeeding pages, the following achievements and general improvements are noted:

The external commerce of the island was increased in value approximately $14,000,000, the aggregate of the year being $92,631,886, more than five times as much as in 1901 and an increase of 17 per cent over 1911, which is the highest percentage of increase recorded. Eighty-seven per cent of this trade was with the United States and 13 per cent with foreign countries. Porto Rico purchased in the mainland markets of the United States merchandise to the value of $37,424,545, over $2,700,000 more than during the preceding year. Of these purchases, $31,000,000 represented manufactured goods, approximately $5,000,000 rice, and the remainder garden produce. In importance as a purchaser of American goods the island advanced to twelfth place, its purchases of such goods having been exceeded by but 11 countries of the world. Sales of Porto Rican products in the United States, all of which would necessarily have been purchased in foreign countries had they not gone from this island, increased $8,107,992, reaching a total of $42,873,401. In spite of the heavy increase in purchases from the United States, imports from foreign countries, while relatively small, were the largest of record, amounting to $5,501,928. The value of exports to foreign countries also exceeded that of any previous year and amounted to $6,832,012, giving a total value to the foreign trade of $12,333, 940, an increase of $3,000,000 over the foreign trade of 1911. Although the total external purchases of $42,926,473 were, on account of the general internal improvements going on, larger than those of any previous year, they did not keep pace with the heavy increase in

production and external sales, which aggregated $49,705,413, leaving the unusually large balance of trade in favor of the island of $6,778,940.

The year's record of internal business and industrial activities indicates sound development and substantial progress in every branch. The assessed value of the property of the island, which in 1905 was less than $90,000,000, and $163,000,000 as reported last year, has since increased 9 per cent and now stands at $178,275,000, showing that, upon the very conservative basis of assessment for taxation, property values have been more than doubled during the seven years since 1905. The deposits of the recognized banking institutions of the territory have doubled since 1908 and while, owing to the industrial activity of the time requiring the close use of available cash resources, they show a slight decrease from last year, their total was more than $10,000,000 at the close of 1911–12. In addition to this, a considerable sum, estimated at an equal amount, was held by private firms engaged in banking, but of which there is no public record. The organized banks of the Territory were regularly examined and found to be conservatively managed and in excellent condition. The annual underwritings of insurance, which showed the phenominal increases of 37 per cent in fire and 89 per cent in life during 1911 were still further increased by 10 per cent in the former and 9 per cent in the latter. Forty new domestic corporations with paid in capital of $1,500,000 and 12 foreign corporations with cash capital of $352,940 were registered and authorized to transact business.

Conditions continued favorable to agricultural pursuits and the output of all products was substantially increased. The acreage under cultivation was again largely extended. Scientific study of agriculture, stimulated by the Federal and private experimental stations, the recently established board of agriculture and insular fair, received more general attention, and as a result the methods of farming have been notably improved and their efficiency is being continually increased.

In 1901 the exports of sugar were less than 70,000 tons; in 1911 there were nearly 323,000 and during the year just closed 367,000, five times greater than they were 11 years ago, and they are still increasing, having advanced 10 per cent during the past year. The external sales of this product, which under local conditions of manufacture net the producers a fair but not excessive profit, yielded $31,500,000 against less than $5,000,000 in 1901, and constituted 63 per cent of the total value of the external sales.

The output of cigars was more than 14 times greater than in 1901, since which year it has continuously increased until the sales of 1911–12 reached 281,000,000, an increase of 7,500,000 over the preceding year. Of these, 170,000,000 were consumed upon the mainland and 111,000,000 in Porto Rico at satisfactorily profitable prices, the demand exceeding the supply. Less than one-fourth of the tobacco crop is shipped in the leaf, the remainder being shipped in manufactured form. This industry contributed $7,406,841, or 15 per cent, toward the total receipts from external shipments.

The coffee crop of 1912 was the largest in the history of the industry and sold at profitable prices, substantially a third higher than those of the year 1909–10 and several years preceding it The value of

coffee sold abroad during 1911–12 was $6,754,913, furnishing one-eighth of the receipts from foreign commerce. With the prosperity attending this industry it is being extended throughout the mountains of the island, the soil and climate of which are especially adapted to the successful culture of the highest grades of coffee to be found in the world. Heretofore this product has gone principally to France and Cuba, where it is highly prized by the connoisseurs of those countries. Porto Rican coffee has never been known commercially in the United States, because, first, it commanded a ready market at the highest prevailing prices abroad, and, second, the small quantity sent to the United States has not been placed upon the market in form to be identified. It is now, however, being introduced into the American market through the commercial agency of the Government of Porto Rico at No. 569 Fifth Avenue, New York, and may be purchased of the principal grocers of New York City in hermetically sealed tins under the special guaranty of the Porto Rico Association. The government has taken an active interest in this undertaking, through its commerce commission, in the belief that if it were known that one of the finest coffees produced in the world is grown on American soil it would be appreciated by American consumers looking for the best and find a steady demand in the home market where it will not be subject to foreign tariff caprice.

The shipment of fruit for external markets, which became of commercial importance for the first time during 1903, was increased in value during the past year to $2,377,762. The fruits now successfully raised and profitably marketed are oranges, pineapples, and grapefruit, which, due to their superior quality, find ready sale wherever offered in the United States. Fruit raising in Porto Rico is rapidly becoming one of the principal industries of the Territory. The producers are cooperating to secure the highest efficiency in packing and marketing and are receiving the active assistance of the Porto Rico Commerce Commission in securing the recognition to which the quality of their products entitles them. The first community packing house was erected during the last year and is now in successful operation, giving to its patrons every expert service required from the field to the market, including picking when desired by the owner.

While as yet of comparatively small total value the production of coconuts is one of the most profitable industries of the island and must greatly gain in importance as the waste lands are brought under cultivation. The value of coconut shipments during the past year showed a continuation of the gradual increase they have received during recent years and reached $300,000.

In harmony with the greater business activity and enhanced values, the total net revenue receipts from all sources and for all purposes increased 10 per cent over those of 1911 and aggregated $6,665,348.55, the largest revenue collections of any one year in the history of the island. Although the extension of public services required larger disbursements, the available cash balance in the treasury was increased from $1,214,000.67 at the beginning to $1,794,555.46 at the close of the fiscal year, ending June 30, 1912. On that date the total net bonded indebtedness of the Territory was $4,139,760.40, but $3.70 per capita and 2.5 per cent of the assessed value of the property, while the per capita wealth is conservatively estimated at

$275. Thus is shown a remarkable increase in the public wealth and available cash resources of the government and at the same time a considerable reduction in the public debt. In 55 of the 71 municipal districts (comparable to counties) not a dollar of the delinquent taxes remained to be collected, and but six one-hundredths of 1 per cent of the taxes due and collectable were unpaid in the entire island, a most remarkable showing, both of the generally prosperous condition of the property owners of all classes and the efficiency of the revenue collecting organization under the insular treasury department.

The advance in educational work is again apparent in an increase of 10 per cent in the total school enrollment. The number of scholars enrolled in the public schools during the last year was 160,657, as against less than 26,000 for the first year of American administration, an increase of more than sixfold.

During the 12 years beginning with 1901, $11,691,349.98 have been wisely expended upon the educational system. In place of one school building in the island erected for that purpose, as was the case in 1899, there are to day 1,168 of all classes well distributed throughout the Territory. The educational system is being rapidly improved and adapted to local conditions in line with the best thought of the day upon the subject. Plans have been adopted for the development of vocational training, and it is the purpose of the department so to formulate the regular courses of study as to give to each term the highest practical value.

In legislation much constructive work has been done and three most important things accomplished, namely: An effective, nonpartisan, sanitation service, with all the branches usually comprising such activities, has been established throughout the island, under the direct control of an independent health board, a director of service, and the executive department of the insular government; the election laws were so amended as to insure the secrecy of the ballot, to provide minority representation from each legislative district in the house of delegates, and to require a new registration of the voters of the island; and the establishment of a bureau of labor, the duties of which are to collect and collate information upon the subject of labor, its relations to the industries of the country, hours of labor, the earnings of laboring men and women, and the means of promoting their material, social, intellectual, and moral welfare; to investigate the causes of, and facts relating to, such controversies and disputes between employers and employees as may occur from time to time; and to exercise its good offices for the maintenance of satisfactory relations between employers and employees; and, in general, to perform the duties devolving upon such bureaus.

In public works there has been much activity. Thirty-three important municipal improvement projects, including waterworks, electric-lighting plants, and public buildings, in as many different municipalities, were under construction or projected. Sixty-seven kilometers of macadamized roads were completed, making a total of 1,069 kilometers of territorial roads suitable for motor vehicles under maintenance at the close of the year. The irrigation work, under which 35,000 acres of rich land on the south side of the island will be developed to its full usefulness, has progressed rapidly since practical work began under capable management in 1910 to a point where its completion at the close of 1913 is confidently predicted.

In the administration of municipal affairs increased efficiency and less partisanship in the exercise of official authority is generally noticeable. The obligations of elective officials to the entire communities in which they are serving have been increasingly realized and observed, with the result that complaints of impositions upon members of minority parties, which have been numerous in the past, are rarely presented. Wise and economical use is generally being made of municipal and school revenues and it is a source of satisfaction to observe the great improvement in conditions and physical appearance of the towns throughout the island.

EXTERNAL COMMERCE.

The year's commerce between Porto Rican and other ports, aggregating $92,631,886, was made up of $49,705,413 in exports and $42,926,473 in imports. Export, import, and total trade[1] values for the past 12 years, set forth comparatively in the following tables, show the annual increase that has been almost constant since the establishment of free trade with the United States in 1900:

Merchandise shipped into Porto Rico from the United States and foreign countries.

Years.	From the United States.	From foreign countries.	Total.
1901	$6,965,408	$1,952,728	$8,918,136
1902	10,882,653	2,326,957	13,209,610
1903	12,245,845	2,203,441	14,449,286
1904	11,210,069	1,958,960	13,169,029
1905	13,974,070	2,562,189	16,536,259
1906	19,224,881	2,602,784	21,827,665
1907	25,686,285	3,580,887	29,267,172
1908	22,677,376	3,148,289	25,825,665
1909	23,618,545	2,925,781	26,544,326
1910	27,097,654	3,537,201	30,634,855
1911	34,671,958	4,115,039	38,786,997
1912	37,424,545	5,501,928	42,926,473

[1] Where the words "export" and "import" are used they refer to trade with both United States and foreign ports.

Merchandise shipped from Porto Rico to the United States and foreign countries.

Years.	To the United States.	To foreign countries.	Total.
1901	$5,581,288	$3,002,679	$8,583,967
1902	8,378,766	4,055,190	12,433,956
1903	11,051,195	4,037,884	15,089,079
1904	11,722,826	4,543,077	16,265,903
1905	15,633,145	3,076,420	18,709,565
1906	19,142,461	4,115,069	23,257,530
1907	22,070,133	4,926,167	26,996,300
1908	25,891,281	4,753,209	30,644,490
1909	26,394,312	3,996,913	30,391,225
1910	32,095,645	5,864,574	37,960,219
1911	34,765,409	5,152,958	39,918,367
1912	42,873,401	6,832,012	49,705,413

Merchandise shipped into and from Porto Rico in trade with United States.

Years.	Imports.	Exports.	Total trade with United States.
1901	$6,965,408	$5,581,288	$12,546,696
1902	10,882,653	8,378,766	19,261,419
1903	12,245,845	11,051,195	23,297,040
1904	11,210,069	11,722,826	22,932,895
1905	13,974,070	15,633,145	29,607,215
1906	19,224,881	19,142,461	38,367,342
1907	25,686,285	22,070,133	47,756,418
1908	22,677,376	25,891,281	48,568,657
1909	23,618,545	26,394,312	50,012,857
1910	27,097,654	32,095,645	59,193,299
1911	34,671,958	34,765,409	69,437,367
1912	37,424,545	42,873,401	80,297,946

Merchandise shipped into and from Porto Rico in trade with foreign countries.

Years.	Imports.	Exports.	Total foreign trade.
1901	$1,952,728	$3,002,679	$4,955,407
1902	2,326,957	4,055,190	6,382,147
1903	2,203,441	4,037,884	6,241,325
1904	1,958,960	4,543,077	6,502,037
1905	2,562,189	3,076,420	5,638,609
1906	2,602,784	4,115,069	6,717,853
1907	3,580,887	4,926,167	8,507,054
1908	3,148,289	4,753,209	7,901,498
1909	2,925,781	3,996,913	6,922,694
1910	3,537,201	5,864,574	9,401,775
1911	4,115,039	5,152,958	9,267,997
1912	5,501,928	6,832,012	12,333,940

* * * * * * *

From the foregoing figures it will be seen that while the change in tariff conditions has had a marked effect on trade with the United States, it has not interfered with a steady increase of the trade with markets outside the tariff wall.

Among the principal classes of imports from the United States during the past year were breadstuffs invoiced at $7,548,100, among which were rice shipments valued at $4,894,747, and flour at $1,757,278. The imports of cotton goods aggregated in value $5,575,642; manufactures of iron and steel $4,445,396; meats and meat products $3,194,047; and leather goods $1,599,047. Other imports, both from the United States and from foreign countries, consisted of merchandise of every description required for use and consumption in a prosperous and progressive country.

Sugar continues to be the principal article of export, the total shipments during the past year having aggregated 367,145 tons, valued at $31,544,063.

Sugar Exports.

Fiscal years.	Tons.	Value.	Average price per ton.
1901	68,909	$4,715,611	$68.43
1902	91,912	5,890,302	64.08
1903	113,108	7,470,122	66.04
1904	129,647	8,690,814	67.03
1905	135,663	11,925,804	87.90
1906	205,277	14,184,667	69.10
1907	204,079	14,770,682	72.37
1908	234,607	18,690,504	76.52
1909	244,257	18,432,446	75.46
1910	284,522	23,545,922	82.75
1911	322,919	24,479,346	75.81
1912	367,145	31,544,063	85.92

Nearly 5,500,000 pounds of tobacco leaf and scrap, invoiced at $2,320,130, represents raw material shipped to tobacco manufacturers on the mainland. Cigars exported numbered 169,765,656, with a valuation of $5,086,711, representing a decrease of nearly 5,000,000 cigars from the number exported during the previous year, the reason for this decrease being an increase of over 10,000,000 withdrawn for local consumption. There was a slight decrease in the cigarette exports for the same reason.

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Cigars.

Fiscal years.	Withdrawn for consumption.	Withdrawn for export.	Total output.
1907	74,698,430	132,669,823	207,368,253
1908	76,983,830	103,781,719	180,765,549
1909	84,933,260	140,302,271	225,235,531
1910	92,700,160	151,724,438	244,424,598
1911	101,064,495	174,743,098	275,807,593
1912	111,682,615	169,765,656	281,448,271

Cigarettes.

Fiscal years.	Withdrawn for consumption.	Withdrawn for export	Total output.
1907	347,722,000	10,460,000	358,182,000
1908	354,407,900	11,232,424	365,640,324
1909	365,525,500	11,244,500	376,770,000
1910	393,844,300	13,142,000	406,986,300
1911	459,710,045	11,760,000	471,470,045
1912	532,431,000	[1] 11,293,350	[1] 543,724,350

[1] Treasury figures.

Tobacco leaf and scrap exported.

Fiscal years.	Pounds.	Value.
1907	4,344,659	$1,232,058
1908	8,402,286	1,996,055
1909	4,539,320	1,250,237
1910	4,176,172	1,258,317
1911	4,450,012	1,554,783
1912	5,456,751	2,320,130

The average price received for coffee was 16.8 cents per pound, or 2 cents higher than ever before. At the same time the quantity exported (40,146,365 pounds) was 6,000,000 pounds in excess of the total exports of the previous year, and the largest quantity ever shipped from the island in any one year except 1910.

Coffee exports.

Fiscal years.	Pounds.	Value.	Average price.
1901	12,157,240	$1,678,765	$0.137
1902	26,906,399	3,195,662	.118
1903	35,207,139	3,970,574	.112
1904	34,329,972	3,903,257	.113
1905	16,849,739	2,141,009	.127
1906	28,290,322	3,481,102	.123
1907	38,756,750	4,693,004	.121
1908	35,256,489	4,304,609	.122
1909	28,489,236	3,715,744	.130
1910	45,209,792	5,669,602	.125
1911	33,937,021	4,992,779	.147
1912	40,146,365	6,754,913	.168

* * * * * * *

Fruit shipments show an increase from a valuation of $2,073,993 in 1911 to $2,377,762 in 1912. Especially is the increase apparent in the exportation of fresh and canned pineapples and in grapefruit, as shown by the accompanying statements and graphic charts.

Value of fruit exports.

Fiscal years.	Oranges.	Pine-apples.	Canned pine-apples.	Coconuts.	Grape-fruit.	Other fruits.	Total.
1901	$84,475	(1)	(1)	$8,334	(1)	$16,992	$109,801
1902	51,364	(1)	(1)	12,720	(1)	9,898	73,982
1903	230,821	(1)	(1)	326	(1)	61,956	293,103
1904	352,646	(1)	(1)	(1)	(1)	81,214	433,860
1905	125,422	(1)	(1)	(1)	(1)	130,478	255,900
1906	295,633	$27,826	$42,186	129,793	(1)	7,420	502,858
1907	469,312	64,831	63,519	174,957	$7,586	3,737	783,942
1908	630,720	172,779	98,203	206,704	44,535	11,320	1,164,261
1909	401,912	442,780	117,830	204,498	76,310	18,154	1,261,484
1910	582,716	555,044	106,587	218,870	162,749	9,851	1,635,817
1911	703,969	611,291	149,744	258,168	309,698	11,123	2,073,993
1912	584,414	684,774	258,671	308,883	525,048	15,972	2,377,762

[1] Shipments included under "Other fruits."

Fiscal year.	Sugar.	Cigars.	Coffee.
1901	$4,715,611	$306,115	$1,678,765
1902	5,890,302	1,549,235	3,195,662
1903	7,470,122	1,753,795	3,970,574
1904	8,690,814	1,460,496	3,903,257
1905	11,925,804	2,152,051	2,141,009
1906	14,184,667	3,074,226	3,481,102
1907	14,770,682	4,241,410	4,693,004
1908	18,690,504	3,414,140	4,304,609
1909	18,432,446	4,383,893	3,715,749
1910	23,545,922	4,480,030	5,669,602
1911	24,479,346	5,355,223	4,992,779
1912	31,544,063	5,086,711	6,754,913

LEGISLATION.

The Sixth Legislative Assembly of Porto Rico convened in second session January 8, 1912, and in accordance with law remained in session 60 days. Several matters of importance had not been disposed of on March 7 at the close of the regular session; therefore, a special session was immediately called and continued until the work of the legislature had been satisfactorily completed on March 14, 1912.

During this regular and special session 85 laws and 19 joint resolutions were enacted. Nearly all of them were beneficial additions to the statutes of Porto Rico, and of special importance are the sanitation law, the law providing for a bureau of labor, and the act providing for minority representation in the House of Delegates.

The sanitation law establishes an insular health board, and a general sanitary organization. It gives the sanitation service ample power and means effectively to attend to the sanitary needs of the island. It concentrates the control of the sanitation work in a director of sanitation. It empowers the board of health to adopt such regulations and rules as may be required and gives them, after approval by the Executive Council, the force and effect of law, and provides a simple means of settling all differences that may arise between those bodies. It is hardly possible that defects will not be found in this law, but it is believed that in a general way it will meet the requirements of the situation, and place Porto Rico in a first-class sanitary condition, a result of the highest importance to the people of the United States as well as to the inhabitants of the island.

The law providing for a bureau of labor authorized the establishment of an organization for the purpose of collecting and making available information concerning labor conditions in the island, and for making a special study of relations existing between employers and employees.

The election law was so amended as to insure the secrecy of the ballot, provide for minority representation in the House of Delegates, and correct various minor deficiencies.

Among laws directly affecting municipal governments are one making permanent the plan for regulating the sale of fresh meats; an act prescribing certain conditions to govern the slaughter of cattle; an act authorizing municipalities to maintain bands or orchestras for public concerts; an act providing for the licensing of dogs and the control of other domestic animals; and an act to authorize municipalities to levy a special bond redemption tax in connection with loans for public improvements.

To the list of corporation laws there was added an act to authorize the organization of local banks and insurance companies; and an act compelling insurance companies to make appropriate deposits to guarantee the settlement of just claims.

Suitable provision was made for the publication by the supreme court of its decisions in volumes for permanent record and reference, and in loose sheets, as soon as rendered, so that they may be immediately available for the information of courts, lawyers, and others interested.

The legislature authorized the investment by the treasurer of $200,000 in first-mortgage bonds of a corporation to be organized for the construction of a modern hotel in San Juan; it authorized a bond issue of $500,000 for use in connection with port improvements at San Juan; it made provision for permanent exposition grounds at San Juan, and appropriated $35,000 for their improvement; and a committee designated as the "Porto Rico Commerce Commission," consisting of the governor, the president of the executive council, and the speaker of the House of Delegates, to have supervision over commercial development and publicity work was created, and $25,000 appropriated for its use.

The few acts that have been mentioned, together with many others of the same nature but of less importance, give to the work of the last Legislative Assembly of Porto Rico, as a whole, a decidedly progressive character.

A complete list of the acts and resolutions of the Legislative Assembly that have had the approval of the governor during the fiscal year will be found in Exhibit A, Appendix I, of this report.

The bill providing for citizenship for the people of Porto Rico, the bill to substitute the original organic act of Porto Rico, the bill providing for a substitute judge in the United States district court, and the bill to authorize the exchange of certain insular government property for portions of the Federal military reservation, all of which measures have for a long time been the subjects of more or less attention or discussion, are still awaiting final action in Congress.

All of this legislation now before Congress is of importance to the welfare of the island. Especially do the people of Porto Rico so consider the citizenship bill. They have waited for more than 10 years to be admitted to American citizenship, and it seemed to them during the last session of Congress that their hopes were about to be realized. It is a concession that, while entailing no new obligation or responsibility upon the people of the United States, would be of inestimable value to its recipients. It is therefore earnestly recommended that the enactment of the citizenship bill now pending in the Senate of the United States be urged at the next session of the present Congress.

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SANITATION SERVICE.

The sanitation law passed by the Legislature of Porto Rico in 1911 in practical application proved to be defective in many respects, especially in conferring the necessary authority on health officers, and in defining the administrative powers and functions of the executive head of the service, so that the comparatively few results accomplished under its provisions were attained in the face of great disadvantages. A general organization to take over the sanitation service in the various municipalities throughout the island was established and equipped with the necessary facilities for the purpose, and although some time was required to perfect the organization, and to familiarize the health officers with the provisions of the law and the proper manner of performing their duties, which were, of course, entirely new both to them and to the public with which they had to deal, a material improvement in sanitary conditions throughout the island in due time was noticeable.

By permission of the Secretary of War, Maj. Robert E. Noble of the United States Army, came to Porto Rico in August of 1911 from the Panama Canal Zone, where he had been engaged in the extermination of mosquitoes, to instruct the officials of the local sanitation service as to the methods employed in that work on the zone. As a result of the efforts of Maj. Noble and his associates during the six months that he was in the island, San Juan, formerly infested with mosquitoes, was made practically free from this pest, and their number was greatly diminished in Santurce and other suburbs of San Juan, where their complete eradication could not be accomplished on account of the absence of sewers, poor surface drainage, and adjacent swamp lands. The mosquito work has also been carried on in Ponce and

other municipalities, where they have ceased to be as great a source of annoyance and danger as formerly, although progress toward their complete eradication will be more or less delayed by the limited amount of money available for use in that work.

There has been a material decrease in the number of cases of typhoid fever, due to the strict enforcement of rules with reference to the condition of latrines and the disposal of excreta. In July, 1911, when the service was inaugurated, there were over 40 cases of typhoid fever in the city of San Juan, whereas since then there have not been over 10 cases at any one time in that city, with a population of nearly 50,000. Slight epidemics of typhoid fever occurred in Manati, Yauco, and Corozal, due to contamination of water supply or other similar causes, that were promptly eliminated when brought to the attention of the sanitary authorities, and in each case the epidemic was soon wiped out. Some 70 cases occurred in Penuelas, a town of 1,200 inhabitants, caused by contamination of the water supply, but prompt action on the part of the sanitary authorities soon put a stop to the epidemic. Danger from the source of infection was eliminated by providing water from an uncontaminated source, pending the completion of a new aqueduct now under construction.

The number of deaths from tuberculosis has drawn the attention of the health authorities to the urgent necessity of improving the faulty housing conditions in the various municipalities. In San Juan, especially, it was found that in many tenement houses there was less than 100 cubic feet of air space per occupant. They were damp, dirty, and not provided with sanitary fixtures. Efforts to correct these conditions were often persistently opposed by certain wealthy and influential property owners, and it was not until after the passage of the new sanitary law, which went into effect the 1st of April, 1912, that the necessary power was conferred on the health officers to enable them to secure compliance with these orders or conviction in cases of refusal.

The work of the anemia or hookworm service, formerly carried on by the bureau of tropical and transmissible diseases, and which became merged into the general sanitation service, is progressing throughout the island. Each health officer maintains a dispensary, where persons suffering from this disease are treated and their condition observed.

Much good work has been done under the United States pure food and drugs act, which is enforced in the island in connection with their other duties by the director of sanitation and the chief of the chemical laboratory, as representatives of the United States Department of Agriculture.

The act reorganizing the sanitation service, passed by the last Legislative Assembly, clearly set forth the powers and responsibility of the director of sanitation and other officials of that service and provided for a new board of health, defining its duties in such manner as to prevent any possibility of repetition of the misunderstanding as to functions that occurred under the provisions of the old law. The most satisfactory relations have existed between the new board of health and the executive branch of the sanitation service, and the attention that the individual members of the board have devoted to their duties has, even during the short time that the board has been in existence, resulted in the completion of a number of important sani-

tary ordinances, by the lack of which the service was previously so seriously hampered.

On the 14th of June, 1912, the sanitation authorities learned that an individual having symptoms of bubonic plague had just died in San Juan. An immediate investigation was made. The measures taken to determine the nature of the disease included the inoculation of a guinea pig, that being the only recognized method of making a positive diagnosis of bubonic plague. Symptoms of the plague developed in the guinea pig on June 18, and the fact of the presence of bubonic plague in Porto Rico was immediately reported to the insular board of health, as required by law, and upon confirmation by that board, the fact was made known to the public by means of a proclamation issued by the acting governor under date of June 19. Undoubtedly the period that elapsed between the discovery of this first case of plague and its official recognition and the adoption of measures to prevent its spread is the shortest on record in any country. The health authorities of Porto Rico deserve great credit, not only for having so promptly discovered the infection, but for so fearlessly then and since informing the public fully as to facts. It at once inspired a confidence in the efficiency and integrity of the service that has since been of valuable assistance to it in the performance of its work. The prompt and effective measures that were immediately adopted apparently checked the infection and prevented a general epidemic throughout the island. There is every reason to believe, at the date of this report, that it will be confined to the city of San Juan and kept so well under control that there will be no more than an occasional case among human beings and that other parts of the island will remain free from infection. It is confidently anticipated that as soon as the rat extermination work and the rat proofing of buildings, now being energetically carried on in San Juan and other municipalities, is completed the island will not only become free from the infection but that there will be no further danger from this source in the future.

To the United States Public Health and Marine-Hospital Service the insular Government owes a debt of gratitude for the prompt response to its request for the services of officials who had had experiences in fighting bubonic plague in California and other places. By taking advantage of their experience and advice, the officials of the insular sanitation service have been able to make every effort an effective one instead of first having had to acquire a knowledge of the methods of conducting a plague campaign by means of costly experience and after hazardous delays.

The vital statistics for the past year, which are shown in detail in Exhibit F of Appendix I herewith, show a registration of births to the number of 39,874, an increase of 2,182 over the number recorded during the preceding year. Estimating the present population at 1,149,396, this number of births brings the birth rate up to 34.69 per 1,000. A total of 27,697 deaths were reported, resulting in a balance of 12,177 in favor of births. The mortality rate, upon the basis of the number of deaths stated, was 24.02 per 1,000.

The total expense of the sanitation service during the year, according to approved accounts in the hands of the director of sanitation at the close of business June 30, 1912, was $639,029.84. Of this amount $29,200.85 was expended in emergency measures for the suppression

of localized outbreaks of typhoid fever and in inaugurating the bubonic plague campaign, and $108,326.71 represents purchases of wagons, draft animals, furniture and fixtures, buildings and other permanent equipment, so that the disbursements to cover current expenditures amounted to but little over $500,000.

The immediate results attained through the establishment of a centralized sanitation service in Porto Rico are apparent in improved sanitary conditions in the municipalities throughout the island, not only with reference to streets, but to hotels, restaurants, milk depots, meat markets, and bakeries, and the extensive installation in private houses of modern sanitary equipment. Results are apparent in the careful supervision over the condition of individuals and the prompt notation and treatment of contagious or communicable diseases, the strict enforcement of the pure-food laws, and many other services for the improvement of health conditions in the island. The efforts of sanitary officials in the various municipalities to bring the people to a realization of the intimate relation between cause and effect, the intimate relation between impure water supply, insanitary markets, and carelessness in the disposal of garbage and other filth, and the prevalence of typhoid fever and other diseases, has awakened the active interest of each and every inhabitant in the installation of aqueducts and sewer systems, sanitary markets, and other similar public works, and indirectly resulted in the necessary action on the part of the municipal administrations where these improvements were lacking to secure them.

INSULAR POLICE.

The appropriation made by the last Legislative Assembly for the police provided for an increase of 25 guardsmen, bringing the full number up to 625. At present the police organization consists of a police commission, composed of 3 members, appointed by the governor; 1 chief of police with general supervision and control over the work of the entire force; 1 adjutant, who acts as the executive officer; 1 police inspector at large; 1 chief of bureau of information in charge of secret-service work; 1 chief of detectives and 66 district chiefs, the latter being in direct charge of the guardsmen. The results obtained from an increase in the number of mounted men have been gratifying. The department had at the end of the year 144 horses. Bicycles have also proved to be valuable aids in police work in districts where roads will permit of their use.

The police during the year seized 3,173 deadly weapons, among which were 577 revolvers, 1,587 knives, and 605 razors. The seizure of so many concealed weapons does a great deal toward reducing the number of crimes of violence. Sixty-three murders were committed during the year, and in each case the criminal was captured; 53 of them were convicted and 10 acquitted. The total number of arrests for all causes was 52,967, in 86 per cent of which convictions resulted. The efficiency of the force, as will be seen from the foregoing, has been maintained at its usual high standard.

CIVIL SERVICE COMMISSION.

The civil service commission received 870 applications for examination during the year ending June 30, 1912, and 651 applicants presented themselves for examination. Of these 377, or 58 per cent,

passed. Among the more important examinations held were those for superintendent of public works, supervisor of prisons, and legal translator. The demand for men possessing special technical knowledge, particularly for the irrigation service, has made it necessary to bring a considerable number of employees of this character from the United States during the past year.

The Porto Rican Civil Service Commission has during the year, at the request of the United States Civil Service Commission, acted in behalf of that body and conducted examinations for Federal Government employees.

The local legislation under which the Porto Rican civil service is conducted, while susceptible of some improvement, has, nevertheless, enabled the commission during the past year to accomplish much in the direction of securing good and efficient public servants.

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MUNICIPALITIES.

The creation by the last Legislative Assembly of the municipalities of Hormigueros and Guaynabo increased the number of separate municipal governments to 71. Many municipalities throughout the island have taken advantage of the recent laws authorizing bond issues for public improvements, and 33 distinct plans for waterworks, sewer systems, and other much needed improvements are now in hand. The most important among these are the waterworks and sewer systems proposed for Ponce, Yauco, Cayey, Caguas, Humacao, and Bayamon. Plans for these projects already completed cover work estimated at nearly half a million dollars. More municipal improvements have been projected or undertaken during the past year than ever before in the history of local municipal administrations. One of the most important is the pier now well under construction at Ponce which will cost approximately $300,000. The city of San Juan is engaged in extensive street improvements and in the construction of a new public market. It is considering a new sewer and water system and is at work upon plans for the reconstruction of some of its poorer wards for providing therein modern tenement houses and dwellings for the laboring classes.

These improvements and others contemplated will contribute much toward better health conditions throughout the island, and with the activity of the central sanitation service satisfactory sanitary conditions should be attained.

The municipal governments are in good financial condition. Their gross income for the fiscal year 1911–12 amounted to $1,946,605.81, or $248,978.52 more than that of the previous year. The only municipal bonds outstanding are those of San Juan, Ponce, Mayaguez, and Arecibo. The original issues amounted to $1,100,000, of which $772,000 was redeemed January 1, 1912, reducing the obligation to $328,000. The financial condition of nearly all of the municipalities is such as to permit other bond issues to cover immediate cost of all necessary public improvements.

The total indebtedness of municipalities on June 30, 1912, was $562,982.88, a decrease of a little more than $160,000 from the municipal debt at the end of the previous fiscal year. This amount includes the bonded debt of $328,000. The cash on hand in bond redemption funds amounted to $84,615.54, and available for expendi-

ture by municipal treasuries $429,071.06, or a total of $513,686.60, showing that the available cash resources of the municipalities were almost sufficient to liquidate their entire indebtedness at the end of the fiscal year, the balance against them being but $49,296.28.

Several laws of direct benefit to the municipal governments were passed by the last Legislative Assembly. The law with reference to the disposition of municipal lands was enacted to authorize municipalities to dispose of such lands as are not required for public purposes to individuals under proper conditions for use as building sites. The sale or lease of these lands, their improvement, and the revenue that will accrue from them will result in much benefit to the communities in which they are located, whereas theretofore there was no legal method of employing them to advantage, and the result was that they were either unimproved and idle, or were used by unlawful occupants.

Another law passed by the legislature authorizes municipal councils to pass ordinances imposing special taxes in connection with bond issues for public improvements. They were authorized by another act to appropriate funds with which to equip and maintain municipal bands or orchestras; and to pass ordinances providing for the licensing of dogs, the control of domestic animals, and the maintenance of public pounds.

The new municipality of Guaynabo, consisting of four wards from the municipality of Rio Piedras and six wards from the municipality of Bayamon, was created, and the village of Hormigueros, formerly a part of the municipality of Mayaguez, was made a separate municipality. In both instances the districts segregated from the old municipalities were so far removed from the original seats of government that they were deprived of many of the advantages that they may now enjoy as independent corporations.

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Public Works, Buildings, and Lands.

ROADS.

By the completion of 69 kilometers of highway during the past year, the total length of the insular road system was increased to 1,069.4 kilometers. Construction work during the year has established highway communication between 10 more municipalities, and has, with the exception of but a few kilometers, completed the insular road entirely around the island. It has also given access to a number of interior points which have heretofore lacked proper transportation facilities. The most important of these connections with the interior is that by means of the Penuelas Road, completed during the past year, furnishing communication between Ponce, by way of Penuelas, and Guayanilla to Yauco and the principal coffee district, through to Mayaguez. Expenditures for road construction and maintenance during the year have amounted in all to $718,265.50. The results obtained in the employment of convict labor, both in construction and maintenance work, have been so highly satisfactory as to remove any doubt as to the advantage of permanently continuing its use in public works. Road-construction work during the past two years, a considerable portion of which has been done by convicts, has averaged in cost $5,500 per kilometer, or some $500 less than when the

work was done entirely under contract or by free labor. This reduction in cost has been secured in spite of the fact that much of the new construction work has been carried on in mountainous districts where heavy cuts through rock formation and extensive grading has been necessary. The average expense of maintenance has been $304.42 per kilometer, also representing a slight reduction from the cost during 1910–11. The problem of maintenance is becoming difficult by reason of constant additions to the number of passenger and freight automobiles operated on the insular highways. Especially are the automobile trucks injurious to the older roads, most of which, while well constructed, were surfaced for slow-moving vehicles with metal tires. It is hoped through experiments with surface preservatives of various kinds now in progress that a satisfactory means of protecting the roads against automobile wear will be found. Thus far the preservative that has apparently given the best results is an asphalt dressing now in use on about 20 kilometers of the road between San Juan and Caguas, subjected to the heaviest traffic. Among the most important road-construction projects now in progress and nearing completion are those from Manati to Arecibo, from Aguada to Anasco, and directly between San Juan and Bayamon. Although the last-mentioned road has been projected and the money available for its construction for some time, work was not started until recently, pending a settlement of the question as to whether the Federal Government or the insular government had jurisdiction over the swamp lands around San Juan Harbor, through which the road is to run. The control of the insular Government over these lands, however, was definitely determined through the recent establishment by the Secretary of War of the San Juan Harbor lines. Construction of the San Juan-Bayamon Road was thereafter immediately commenced and is now well under way. When completed it will be one of the most important roads in the island, for the reason that it will complete the road circuit of the island and serve as the natural means of approach to San Juan by land from the western and northwestern districts. It will also afford an adequate means of access to the extensive fruit section around Bayamon and the districts beyond which are now entirely dependent upon transportation by water across the bay.

TELEGRAPH AND TELEPHONE SERVICE.

The Government telegraph and telephone system now affords communication between 65 different municipalities. Many improvements in the service and renewals of equipment have been made and the service, while not yet up to a satisfactory point of efficiency, was materially improved during the year. A total of 247,860 messages were sent and received by the bureau of insular telegraph during the year ended June 30, 1912, an increase of 26,528 messages over the number transmitted during the previous year. The expense of maintenance and operation was $69,566.23; cash receipts amounted to $71,628.13, resulting in an apparent profit of $2,061.90, in addition to the value of the service rendered free of charge to the Government. The sum of $15,395.50 was spent from the special appropriation of $25,000 made by the last Legislative Assembly for the reconstruction and extension of lines.

It is anticipated that the present government telephone and telegraph lines, with an extensive local and long-distance telephone system now being installed under authority of a private franchise recently granted, will, before the end of the present year, make every point in the island accessible by wire.

PUBLIC BUILDINGS.

The cost of repairs to public buildings during the past year has amounted to a little more than $23,000. This work has been limited by the expediency of appropriationg money for that purpose rather than by the necessities arising through the condition of the buildings under maintenance. As stated in previous reports, most of the buildings used by the Government are of such ancient construction that their present rate of deterioration is high. In anticipation of the possibility of replacing the buildings with new and modern structures from time to time as resources will permit, it has been considered advisable to limit expenditures for the repair of old buildings to such work as is required to maintain them in a habitable condition.

Four new buildings have during the year been completed by contract and four by administration at a total cost of $61,000. They include concrete school buildings at Vieques, Ciales, Aguada, and Vega Alta. Other building projects commenced and completed during the year have involved an expenditure of $48,000, while other work to the value of $96,000 is in progress, and plans for a number of additional buildings have been approved ready for advertisements for bids. The total amount involved in work under progress and contracted for at the end of the fiscal year was $229,236.89.

PUBLIC LANDS.

Surveys of a number of tracts of public lands of more or less importance have been completed during the year, including the survey of a tract of some 2,000 acres in extent near Guayama. Leases for this and 74 other tracts of land have been completed.

By reason of the withdrawal of the United States naval forces from Porto Rico and an exchange of property with the Lighthouse Service, there has been transferred to the insular Government by the Federal authorities a large amount of land and buildings of considerable value in and around the city of San Juan. The property acquired includes four tracts of land, bordering on the harbor of San Juan, which constitute a material addition to the water-front holdings of the insular Government that can be used to great advantage in the development of shipping and warehouse facilities. The acquisitions also embrace a number of substantial buildings formerly occupied by the naval forces on the water front, as well as extensive and valuable tracts of land along the military road in Puerta de Tierra.

The legislature authorized the commissioner of the interior to transfer to the city of San Juan the strip of insular land between the military road and the street railway track in Puerta de Tierra, to be converted into a public promenade; the sale of a strip of land some 90 acres in area, in Fajardo, to the Fajardo Development Co., for a right of way for a public service railway operated by that

company; it approved the agreement entered into between the governor of Porto Rico and the commanding general, Department of the East, covering the proposed exchange of the insane asylum building and property, and the military hospital building at San Juan, for certain military reservation properties, in San Juan, Cayey, and elsewhere in the island; and it authorized the San Juan Harbor Board, with the approval of the executive council, to dispose of public lands adjacent to and in the vicinity of the harbor of San Juan, in connection with the port improvements to be undertaken by that board.

The insular Government now owns large tracts of land in the city of San Juan, and around the harbor of San Juan, as well as in other parts of the island, that should be sold or leased under conditions that will result in their improvement and some benefit to the people of Porto Rico. The economic use of the public lands, for the benefit of its owners, The People of Porto Rico, has never received the intelligent consideration and energetic treatment which that subject requires, and it is a sad admission to make but nevertheless a fact that some of these lands within the larger towns of the island are even yet the site of insanitary and unwholesome conditions that make them a menace to the health of the communities occupying them and living upon adjacent premises. A correction of these conditions, however, has begun and will be urged forward as rapidly as possible with the instruments available.

HARBORS AND DOCKS.

The scarcity of adequate accommodations for vessels in the ports of the island is still a matter of much concern and study. Important progress toward an ultimate solution of the existing defects has, however, been made. A private company has completed a large and commodious dock and warehouse system at San Juan that will afford material relief, especially in the handling of sugar and other bulky cargo. A franchise was recently granted to the American Railway Co. under which work on another pier will soon be commenced, and other applications for permits to construct additional piers are now under consideration.

The last Legislative Assembly passed an act creating a harbor board for the port of San Juan and authorizing a $500,000 bond issue to be used in the construction of water-front improvements. The board consists of the commissioner of the interior, the mayor of San Juan, and three import and export merchants of that city. The board has ample powers and will formulate comprehensive and detailed plans covering the improvements required and carry them through to completion. Considerable work on the required plans has already been completed, embracing the construction of bulkheads, the widening of the streets approaching and along the water front, the apportionment of warehouse space and railway terminal facilities. The Secretary of War recently approved tentative harbor lines at the port of San Juan, which will enable the harbor board to proceed with the work of developing the port facilities without further delay on that account. Congress has also authorized a survey of the harbor and the preparation of an estimate to be used as the basis for a Federal appropriation with which to complete the dredging thereof.

This work should be done at the same time with the shore improvements and in such manner as to assist in the general plans to improve the port as required by its increased and rapidly increasing commerce. With this in view, as well as the increased commerce which, if prepared to accommodate it, should be enjoyed by Porto Rico from the opening of the Panama Canal, it is earnestly urged that Congress he requested to make provision early during its next session for the dredging of San Juan Harbor as recommended by the United States Engineers.

A $300,000 pier of modern type is under course of construction at Ponce. It will provide all necessary facilities for handling cargo at that port for a long time to come. Plans for improving the port of Arecibo are under consideration, and improvements required at other ports of the island will receive attention in due time.

IRRIGATION PROJECT.

Favorable weather conditions have permitted even greater progress on the irrigation project than was hoped for at the beginning of the year. In accordance with an act of 1911 all new construction work is now being performed administratively by day labor. All contracts have been completed except the two for the Toro Negro and Carite Tunnels and for the Toro Negro Dam, and arrangements have been made for the cancellation of the latter and completion of the work by administration. Labor conditions have been fairly satisfactory. The demand for skilled labor in private enterprises has been so heavy that many skilled workmen for the operation of construction plants have of necessity been brought to the island from the United States. The supply of common labor has varied materially with the demand in the cane fields during the cane season, having been scarce and the wages controlled by the planters' scales. As an experiment a mess for common laborers was established at one of the construction camps, with decidedly satisfactory results, so far as the retention and control of the men is concerned. Although this mess and the three maintained for skilled laborers have not as separate propositions been financially successful; the immediate and great increase in the efficiency of the men, especially the common laborers, when furnished substantial and wholesome nourishment, is sufficient to have warranted furnishing them food free of charge, if necessary. Sanitary and health conditions receive special attention at all the construction camps and have at all times been favorable.

Eighty per cent of the Carite Tunnel work is finished and it is expected that it will be completed in November, 1912. The Toro Negro Tunnel, together with the concrete work in the diversion and distributing canals, has been completed. One-third of the work on the Patillas Dam is completed. This dam, 135 feet high and 1,000 feet long, crosses the Patillas River near the town of the same name. The dam and all construction work in connection therewith will, it is estimated, be brought to completion about December 31, 1913. The Carite Dam, which will be 110 feet high and 500 feet long, is nearly completed. The work on this dam and dependent structures will probably be finished by June, 1913. Construction work on the Guayabal Dam, another important structure, to be 115 feet high

and 990 feet long is nearly 40 per cent completed and will, it is estimated, be terminated before July 1, 1913.

The other features of the irrigation project, including canals, syphons, power stations, etc., dependent upon the structures above mentioned, are all nearing completion and will be ready for use at the time of the termination of the work upon the main features.

In view of the favorable conditions that have attended the construction work on the irrigation project during the past year, it is estimated that it will be completed in its entirety during the early part of the year 1914.

The $3,000,000 derived from the first sale of bonds will probably be expended by February 1, 1913. The additional bond issue of $1,000,000 will be sold and that amount made available in January, 1913. Expenditures during the past year have amounted to $1,352,961.51, making the total expenditures of this project up to June 30, 1912, $2,391,259.97.

Further and more detailed information regarding public works completed, in course of construction, and projected will be found in the report of the commissioner of the interior, herewith submitted as Appendix IV.

Education.

The average number of pupils in daily attendance in the public schools during the past year was 114,834, approximately 10 per cent of the population of the island. There were 160,657 pupils enrolled, an increase of 15,000 over the enrollment of the year before. The fact that since 12 years ago, when the plan of universal education was first inaugurated in Porto Rico, the enrollment has increased from 20,000 to over eight times that number is in itself somewhat gratifying, but the educational facilities at present afforded are far from sufficient. There are probably not less than 350,000 children of school age in Porto Rico, and with the present class-room accommodations and number of teachers, not half of them are reached. The school system is being extended, however, from year to year, the number of school buildings is being increased, and more teachers employed. During the past five years the enrollment has increased from 71,000 to 160,000, daily attendance from 44,000 to 114,000, and annual expenditures for public schools from $908,000 to $1,366,000. The number of pupils receiving some form of manual training has grown from none to 6,329, and the number receiving agricultural instruction from none to 8,723; public playgrounds have been established in 61 municipalities, and libraries in 225 schools, while school savings banks are maintained throughout the island.

Progress is apparent, but it represents a very small advance in view of the number of children still lacking educational opportunities. The amount appropriated for the purpose each year has been increased as much as it was believed the revenue of the Government would permit. There are many schools in the island that are properly equipped with the most modern furniture, improved facilities, and libraries. There are, on the other hand, many others that have little more than the few meager furnishings that are essential to the seating of pupils and the conduct of recitations. In many of these schools, in order to accommodate double the number of pupils,

instead of having full day sessions, one set of students attends in the morning and the other in the afternoon.

In view of these conditions it is natural that during the past 12 years the whole attention of the department of education has been concentrated upon so extending the school system as to give some education to the greatest possible number of children. Now, however, more thought is being directed to the character of the instruction given. The importance of gradually including in the course of study as it advances some trade or vocational training is recognized. It is the purpose of the department to make the development of each pupil's natural ability the primary object, so as to make their education of more practical use to them in life; to make the knowledge they acquire harmonize with and applicable to their environments and everyday activities; to give them the necessary mental discipline through the study of practical subjects; and to make their school work better qualify them, both mentally and physically, to take their places as useful members of society, with a respect for labor, capable of sustaining themselves and their dependents in accordance with modern standards of civilization—of being potential and good citizens of the Republic. Some progress toward that end has already been made, and the carrying out of the plan in full is only a question of time and the appropriation of sufficient money for the purpose.

The manual-training and domestic-science courses at present established include work in the carpenter shop, cooking, and sewing of all kinds. Instruction in agriculture is given by means of practical demonstrations and work, as well as through the medium of lectures, appropriate text books and other literature, and embraces the study of seeds, their selection and treatment; soils and their preparation; cultivation, identification, and care of plants; segregation, grafting, and propagation; insect pests and diseases; domestic animals, poultry and dairying; and other pertinent subjects.

High schools are maintained in San Juan, Ponce, Mayaguez, and Arecibo. Each of these schools affords a regular four-year course, and in addition thereto a two-year commercial course. Certificates from them are accepted by the leading colleges and universities in the United States, where a number of graduates are now studying. The commercial course of two years embraces the advanced study of the English and Spanish languages, bookkeeping, stenography, typewriting, business arithmetic, and commercial law.

The educational system of the island is completed by the University of Porto Rico, where a college of liberal arts, an agricultural and a training school for teachers are maintained. This institution is comparatively new, and the opportunities for higher education afforded by it are gradually being extended to meet requirements as the number of students increase.

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Labor, Charities, and Corrections.

LABOR.

The first definite step toward the activity of the insular Government in matters affecting laborers and labor conditions in the island is represented in the passage by the last Legislative Assembly of an act

providing for the establishment of a bureau of labor, the functions of which are to investigate general labor conditions, attend to the enforcement of laws enacted for its protection, exercise its good offices for the maintenance of satisfactory relations between employers and employees, and to suggest such legislation as its investigations may indicate to be necessary. The new organization was made a bureau of the department formerly known as the department of health, charities, and correction, and, inasmuch as the functions of that department with reference to health and sanitation were by the provisions of the new sanitation law transferred to the sanitation service, the act creating the bureau of labor at the same time provided that this department shall be known as the department of labor, charities, and correction. The act provided that the new bureau should commence its activities July 1, 1912, for which reason no work has as yet been done by the bureau to date to be discussed in this report.

CHARITABLE INSTITUTIONS.

Insane asylum.—On June 30, 1911, there were 334 patients in the insane asylum and 113 were admitted during the year, making the total number treated 447. Of these 64 were discharged, 35 having been cured and 39 sufficiently improved to enable friends or relatives to give them proper attention. The asylum officials are still confronted with the difficulty of properly caring for the inmates by reason of the fact that the building used as an asylum is inadequate and far too small for the purpose. Aside from the fact that the structure in use is overcrowded, there are probably not less than 200 persons afflicted with mental disorders in the various municipalities of the island who should be undergoing treatment in the asylum, but in which there are no accommodations for them. The carrying out of plans for the construction of a new insane asylum at Cayey is still awaiting the passage by Congress of a bill now before it concerning an exchange of certain insular government property for a portion of the military reservation at Cayey.

Asylum for the blind.—The asylum for the blind at Ponce gave treatment during the year to 169 patients. Of these 126 were found to be suffering from curable disorders of the vision and 80 left the institution completely cured.

Boys' charity school.—There were 264 boys in the boys' charity school at the end of the fiscal year, ranging in age from 4 to 19 years. During the year 62 boys graduated from the school, having received therein a common school education and training in some useful trade or vocation. The boys' band has been kept up to the same standard that has been maintained by it in the past and has given many public concerts during the year. A number of articles made in the carpenter, plumbing, and other shops of the school, exhibited at the last insular fair, were awarded prizes.

Girls' charity school.—This school had 165 inmates ranging in age from 4 to 17 years on June 30, 1912. There were 47 girls admitted and 32 graduated during the year. In addition to the common school education, more attention during the past year has been devoted to training the girls in the performance of domestic duties. A modern cooking school and laundry has been installed, and the results accomplished in these departments and in the sewing, lace

work, and embroidery classes have been the subject of favorable notice. Articles made by these girls received prizes in the last insular fair, and there is a demand for the lace and embroidery work, not only among people in the island but among persons in the United States who have visited Porto Rico, that far exceeds the supply.

PENAL INSTITUTIONS.

On June 20, 1912, there were 1,585 prisoners serving penal sentences; there were 6,341 commitments during the year and 6,527 releases. The total cost of maintaining the insular penal institutions was $184,998.93. Much of this expense was reimbursed to the Government, however, in labor performed by convicts under legislative authority in the construction of roads. The actual value of the services thus rendered during the year was $86,475.50. The results secured from the employment of convict labor on the insular roads during the past two years have been highly satisfactory, not only to the department in charge of the construction work, in increased economy, but to the penal authorities in a material improvement in the health of the men so employed, and in simplifying the problems of their maintenance and control.

There were 532 inmates in the penitentiary at San Juan on June 30, 1912, of these 73 being women. The deplorable conditions existing in this institution due to lack of sufficient space in both the men's and women's departments is a matter of great concern to the authorities. Plans for a modern penal building and farm have been under consideration for several years, the most suitable location being a tract of land near Cayey adjacent to the site of the proposed asylum for the insane, of which the insular Government has for some time hoped to secure control, through the exchange of property agreed upon between Gen. Leonard Wood and Gov. Post, approval of which was granted by the Legislature of Porto Rico. In this connection, attention is again invited to the recommendation made in previous annual reports that favorable action be taken by Congress on the bill now pending therein concerning this exchange.

A number of additions to and improvements in the building occupied by the reform school for boys at Mayaguez were made during the year, so that the institution is now well equipped for the proper care and training of its inmates. The number of boys in confinement during the year averaged 98 per day. There was a daily attendance in the common education classes of 86; in the carpentry classes of 24; in the tailoring classes of 15, and in the shoemaking classes of 11. The tailor and shoemaker shops, while furnishing all the garments and shoes required for the inmates during the year, afforded the boys employed therein a training that will be of value to them when the time arrives for them to leave the institution.

* * * * * * *

CONCLUSION.

The insular administration with the free cooperation of substantially all elements with which it has had to deal has, through the faithful service of its members and employees, kept pace with the development that has taken place and endeavored to create new opportunities for further improvement.

It has been a pleasure to record the principal incidents and to describe briefly the conditions which combined have made this the most prosperous year in the history of Porto Rico, but the most profound satisfaction comes from the fact that the increasing industry and efficiency of the people have been the chief factors in producing the happy results shown. The influence of the public schools is conspicuous throughout the island. The masses are beginning to think for themselves and more distinctly to realize their rights and obligations as independent members of the body politic. The number who are willing to be driven or guided by influences contrary to their own good and the common welfare of the community is rapidly diminishing. Pride in their Territory, in its institutions, and in the Republic which has given them an opportunity to become, in the full sense of the word, freemen is strong and continually increasing. They are citizens of Porto Rico, but although subjects of the United States, under whose influence they have been educated during the past 14 years, they are not yet citizens of the common country. They wish to be; it has been promised them since 1898 by all responsible representatives and political parties of the United States, and they do not understand why it has been denied them. This delay in granting citizenship to The People of Porto Rico is the chief and practically the only cause of whatever discontent, doubt, and confusion exist in the island. It is the only obstacle to the good understanding and relations of confidence between the two races which are essential to the best interests of all concerned. Without unnecessary delay it should be removed.

Very respectfully, your obedient servant,

GEO. R. COLTON,
Governor of Porto Rico.

The SECRETARY OF WAR,
Washington, D. C.

REPORT OF THE ISTHMIAN CANAL COMMISSION.

ISTHMIAN CANAL COMMISSION,
OFFICE OF THE CHAIRMAN,
Culebra, Canal Zone, September 10, 1912.

SIR: I have the honor to submit the annual report for the Isthmian Canal Commisison for the fiscal year ended June 30, 1912.

ORGANIZATION.

When it was determined to fortify the canal it was recommended that the construction be done by the Isthmian Canal Commission, utilizing its forces and such plant as could be spared from other work under its charge, as this would result in economy in cost and avoid the friction liable to occur if two independent organizations were carrying on work in the same locality. It was proposed at the same time, in order that the completed work might embody the latest improvements in battery construction, that the plans be prepared by the Chief of Engineers, United States Army, subject to the approval of the Panama Fortification Board, and the batteries and accessories

built in accordance therewith. This recommendation received the approval of the authorities at Washington. Funds for commencing the work were provided by the sundry civil act of March 4, 1911, and work was begun August 7, 1911, under the division engineer of the Pacific division and continued in his charge until January 1, 1912, when an additional division was established in the office of the chief engineer, which took over the construction of the fortifications.

The third division of the chief engineer's office, which formerly had charge of general surveys not embraced within the limits of any construction division, together with the meteorological and hydrographic work, was abolished on January 24, 1912, when the general survey work was practically completed. What remained of this, together with the collection of meteorological and hydrographic data, was consolidated with the second division of the chief engineer's office.

The locks and their various appurtenances were designed by and under the direction of Col. Hodges, and, as noted in the last annual report, the erection of the gates, valves, fender chains, and emergency dams, as well as the machinery for operating the lock accessories, were also placed under the division of which he has charge. Active field operations for erecting the machinery were undertaken in September, 1911, and an organization was arranged to handle the work. In the same month, under the same division, field forces were organized to undertake the erection of the range lights and other construction work required in connection with the aids to navigation.

Last year recommendations were submitted looking toward the construction of a dry dock, coaling station, and terminal facilities, and, as these seemed to be favorably considered by the congressional committees visiting the Isthmus, a designing force was organized under Mr. Rousseau for preparing the necessary plans for the dry dock, coaling stations, and machine shops.

Rather than tie up some of the French dredges on the Pacific side which could no longer work to advantage, in October, 1911, they were put at work dredging the area which was to form the basin between the canal and the proposed terminals. In June, 1912, when pending legislation indicated that the various facilities indicated would be authorized, and as time is an essential element, a force was organized under the division engineer, Pacific division, and work was begun by excavating to the north and west of Sosa Hill to enable the moving of the Panama Railroad tracks, so that work can be commenced on the machine shops and terminals. The design of the wharfs in connection with the terminals was assigned to Mr. Williamson.

Continuing the principle of concentration which was adopted in 1908, the shops which formerly had been under the division engineer of the Atlantic division at Gatun were transferred temporarily to the mechanical division on April 4, 1911, and have been so continued since that date. Effective July 1, 1912, the shops at Empire for the repair of steam shovels, and previously in charge of the central division, were transferred to the mechanical division.

With the exceptions noted, the organization of the forces on the Isthmus was continued practically as outlined in previous annual reports.

CONSTRUCTION AND ENGINEERING.

FIRST DIVISION.

The first division of the office of the chief engineer, under Col. H. F. Hodges, United States Army, assistant chief engineer, continued in charge of the design of the locks, dams, regulating works, and accessories; the design and construction of aids to navigation: the inspection of the manufacture and erection, under contract or otherwise, of the lock gates, operating machinery, gates and valves, emergency dams and fender chains, and of the placing of such concrete in the locks as was omitted until the installation of the machinery.

During the fiscal year the general plans for the lower portion of the lower locks at Gatun and Miraflores were completed and approved, as well as the plans for the south middle approach wall at Miraflores and for the uncompleted portion of the south middle approach wall at Pedro Miguel, which was changed from the solid type already built to the reenforced cellular type for the remainder. In addition, all the drawings required for decking over various machinery chambers in the lock walls, snubbing posts, and spring buffers were prepared, so that all the detailed plans for the locks are completed and approved.

Chambers were prepared for the rising stem gate valves by lining up the fixed irons, and 12 completed at Gatun and 2 at Pedro Miguel during the year; at Gatun 12 valves were placed in position. In addition, 6 bulkhead gates were placed in the side-wall intakes and 6 in the center-wall intakes at Gatun. Three rising stem gate valves and 1 cylindrical valve were placed in the Gatun spillway. The cylindrical valves were placed in all the locks during construction and all of them are in position.

To determine the probable leakage around the rising stem valves, also the force required to start the valve and to maintain the motion, a test was made on a set of two valves which were installed in the upper valve chamber of the west side culvert at Gatun. The entrance to the culvert was closed by a water-tight bulkhead, and the culvert between the bulkhead and the valves, with the well above the valves to the top of the wall, was filled with water. By this arrangement there was a greater head against the valves than will obtain when the lock is pumped dry for examination, and considerably greater than the usual operating head. Under a 79-foot head that resulted the combined leakage of both valves was 1.82 cubic feet per second, while the combined friction resulting from the contact of the side seals of the gate, as well as the action of the roller trains, averaged 21,170 pounds for each valve. It had been assumed at 31,750 pounds in the design of the machinery which was intended to exert a lifting force of 60,000 pounds, including all friction and the weight of the valve and its accessories. It is probable that both the friction and the leakage will be reduced in subsequent valves, as certain improvements in detail and workmanship are found in those of later construction.

One of the cylindrical valves in the locks at Gatun was tested for leakage from the exterior by constructing a bulkhead across the entrance to the valve chamber, which was then filled with water.

When the head reached 60 feet the leakage was found to vary from a quantity too small to measure to about 0.25 of a cubic foot per second. The average was about what was to be expected from the tests made at Pedro Miguel and described in the last annual report. Examination indicated that the leather seal or gasket was sufficiently rigid to hold up the movable portion of the valve and prevent its seating properly. The segments which clamped the leather seal were removed and the edge beveled slightly to allow an easier bending of the gasket. After this was done the leakage was found by measurement to be about 0.015 of a cubic foot per second, or about one-tenth of that previously measured. The segments for all the valves are being beveled in the manner indicated as advisable by this experiment.

The two rising-stem valve machines furnished under contract were tested at the works of the manufacturer and found to be satisfactory, after which the commission exercised its option and contract was entered into December 5, 1911, for furnishing all parts for 114 rising-stem gate-valve machines without motors. After successful test of the first two cylindrical valve machines at the works of the manufacturer, contract was awarded, on October 25, 1911, for 118 additional cylindrical valve machines without motors and 12 auxiliary culvert valve machines without motors. Up to June 30, 1912, a total of 21 rising-stem valve machines (except valve stems and thrust screws), 34 cylindrical valve machines, and 3 auxiliary culvert valve machines were received. Delays in shipment occurred, caused by the strike of stevedores at Baltimore, the point of shipment.

Owing to the peculiar climatic conditions on the Isthmus, involving tropical heat and extreme humidity, and the deteriorating effect of these conditions on the insulation of electrical machinery, it was necessary to investigate thoroughly the different kinds of insulation available for use on the lock machinery. To accomplish this, 16 sample motors in all were purchased, 2 from each company offering bids for the motors required. Eight of these were sent to the machine contractors for operating tests on the valve machines, and the other 8 were shipped direct to the Isthmus, where they were subjected to the extreme conditions specified in the specifications accompanying the invitation for bids, in order to test the insulation. They were first placed in a storehouse at Gatun and exposed to the ordinary conditions of climate for a period of about two months, during which time the condition of the insulation was determined periodically by inspection and tests. In order to expedite the action of the heat and humidity they were subjected to a steam test, in which the extremes of temperature and humidity mentioned might be reproduced. In order that the conditions of all motors might be identical in all respects, the motors were placed in a small building erected for the purpose and the tests performed on all motors simultaneously, so that the motors were subjected to the same humidity and temperature for the same length of time. Briefly, the tests consisted of filling the building in which the motors were located with steam, thereby maintaining a temperature of 50° C. for a period of 10 days, making potential tests and measurements of insulation throughout this period. In addition to the steam test, the motors which survived were immersed by filling the case with water at a temperature of approximately 30° C. and maintaining this con-

dition for about five hours, during which time observations of insulation resistance were made continuously. The eight motors which were first shipped to the machine contractors were, after reaching the Isthmus, subjected to the immersion test but not the steam test. The tests were conducted without the presence of any representative of the manufacturers.

The relative standing of the various types of insulation in these tests was, in general, definite and the choice of the most suitable insulation was clear; however, in view of the number of motors tested, it was desirable to obtain a numerical basis of comparison. A schedule of the various stages of the tests was therefore prepared and a number of points assigned for the survival of each of these stages. The motors were given four points for surviving the test; three if, after failure during the test, the insulation recovered without repair; two if, after such failure, the insulation was found possible of repair; one if, after repair, the motor recovered; and none if they failed to recover at all. The total points for each of the four motors representing the manufacturer in the entire series of tests then served as an index from which the relative value of the insulation could be determined. The contract was awarded on the basis of the tests as above outlined. None of the motors had been shipped on June 30.

A series of tests was also made on the sample limit switches purchased under similar conditions as the motors. Insulation and potential tests were made under the climatic conditions of the Isthmus and, while they were not so extensive as the motor tests, sufficient information was obtained to determine the suitability of the various makes and the award on this class of apparatus. Satisfactory progress has been made in the manufacture of these switches, and at the end of the year 50 were reported as shipped from the works of the contractor.

The lock gates are being constructed and erected under contract dated June 21, 1910. During the past fiscal year the shop drawings for all the different heights of gates were completed and approved. The total steel plates and shapes accepted at the mills to the end of the fiscal year aggregated about 52,322 tons, which practically comprised all the rolled material required, excepting that for the spare parts. About three-quarters of all the castings were made, machined, and accepted. All specified chemical and physical tests were carried out and the contract requirements as to the quality of material were in all cases fully met. The only change in the material for any part of the gates was made in the bushings for the pintles at the bottom of certain leaves that will always be in sea water. In order to avoid possible damage through electrolytic action, these bushings will be made of hard-cast Vanadium steel instead of the manganese bronze used in the other gates. Certain of the other leaves which will be operated in brackish water are to be protected from erosion by the use of zinc rings placed close to the bronze bushings.

The total shipment of structural material to the end of the fiscal year 1912 aggregated about 39,000 tons, or 76 per cent of the amount required for all the gates. Of the above total, about 32,000 tons were shipped during the fiscal year, so that on June 30, 1912, a total of 13,000 tons remained to be forwarded, comprising about half the

material for the gates in the intermediate locks at Gatun and the upper locks at Miraflores and all the material for the gates in the lower lock at Miraflores. At this rate of progress the steel work for all the lock gates and the spare parts provided for in the contract will be completed in the shops before November 1, 1912.

On June 30, 1912, the work of erecting the gates on the Isthmus was in progress on 23 gates, or exactly half of the total number on the canal, but these gates were in various stages, and none of them was entirely completed. They comprised all the gates in the upper lock and the intermediate gates in the lower lock at Gatun and all the gates at Pedro Miguel excepting the lower guard gate in the west chamber. No material was placed at Miraflores. The total steel in place in the several gates at the end of the fiscal year amounted to 19,631 tons, or about 34 per cent. With the exception of 412 tons previously reported, all of this material was erected during the fiscal year. The total number of field rivets driven to June 30, 1912—practically all of them during the fiscal year—was 963,500 out of 5,750,000, or only 17 per cent of the total.

The completion of the several gates has fallen considerably behind the dates specified in the contract, due in part to the failure of the contractors to deliver the necessary material and tools on time, and in part to the limited number—and in some cases to the poor quality—of mechanics and laborers. This has been the case especially in the field riveting and the machine work necessary for the erection of the gates. A close and continuous inspection was maintained, and it is believed that the completed gates will meet fully the standard laid down in the specifications. The tests for watertightness made in the first gate at Gatun indicate excellent workmanship in this respect.

Contracts were entered into toward the end of the previous fiscal year for the first two miter gate-moving machines and for the first miter forcing machine. These were completed and satisfactorily tested at the works of the contractors and shipped to the Isthmus. The miter gate-moving machines were installed in their respective places, and one tested in regular service of swinging a gate in the dry. The operation was successfully performed in 1 minute and 48 seconds, or 12 seconds less than the estimated time. As the tests were satisfactory, the contract for the remaining 90 miter gate-moving machines was made on February 11, 1912. The award for the motors for these additional machines was also made. The installation of the miter forcing machine was not completed at the close of the fiscal year, as the structural features of the gate were not ready to permit of its installation.

The design selected for the construction of the chain fenders was described in the last annual report, and during the fiscal year bids were invited and contracts entered into for the delivery on the Isthmus of all parts of one fender except the chain, which was built at the United States Navy Yard at Boston. Under these contracts the commission reserves the right to purchase the material for the other 23 fenders at prices named in the contractors' bids, if the test of the one proves it to be satisfactory. To determine the best form of emergency resistance valve, an elaborate series of tests was made in the power plant of the Prudential Insurance Co. at Newark, N. J. Three types of valves were tested under conditions approximating

those of actual operation, two of them giving satisfactory results. The chain is the only part of the apparatus that was shipped to the Isthmus.

All material for the structural steel covers by which the electric locomotive track is supported over the lock-gate recesses in the masonry has been provided for and the erection of the steel in the field was let by contract dated July 7, 1911. At the close of the fiscal year the erection of all the covers in the Gatun and Pedro Miguel Locks had been practically completed, but no work had been done at Miraflores.

The electric-towing locomotives were described in the annual report of 1910. Bids for these machines were invited, and the same policy was followed as in the case of other machines of asking the price for one and also on the remainder if the sample proves satisfactory. A contract was entered into for the delivery of one locomotive complete, with the option of purchasing the other 39 that will be required. Under the contracts for materials in connection with the locomotive track, 95 per cent of the structural parts was completed during the year. The delivery of the steel rack sections was 44 per cent completed; considerable difficulty was experienced at first in producing sections which were sufficiently accurate for the purpose intended, but this was subsequently overcome. There was delivered on the Isthmus 60 per cent of the malleable-iron supporting brackets for the conductor-slot covers, but these were rejected on account of general irregularities. The contract for furnishing malleable-iron cover plates and washers was completed. The bids first received for crossovers and turnouts were not satisfactory and were rejected. A readvertisement secured lower prices and a contract was entered into for furnishing them. Up to the end of the fiscal year none had been shipped.

Specifications were issued September 9, 1911, covering the main generating equipment for a hydroelectric station, containing three 2,000 kilowatt units, to be located adjacent to the spillway in Gatun Dam. The equipment is to consist of three 2,250-kilowatt water turbines, three head gates, three penstocks, three governors, three draft tubes, three 2,000-kilowatt generators, three direct-connected 50-kilowatt exciters, two 100-kilowatt motor-driven exciter sets, one 30-ton electric crane, and one lubricating system. A contract was entered into December 2 for the hydraulic equipment, with promise of delivery in 150 to 195 days for the water wheels and governors, 125 to 150 days for the penstocks, and 90 to 120 days for the head gates. A contract was entered into on the same date for the electrical equipment, with promise of delivery in 170 to 200 days for the generators and 140 to 160 days for the exciters. At the close of the year one generator was completed and ready for test at the works of the contractor. The only material delivered on the Isthmus is 60 per cent of the penstocks. Every effort is being made to have the remainder of this material on the Isthmus at an early date, and the latest advices from the United States indicate that complete shipment has been made.

There will be available sufficient water from the storage in Lake Gatun to warrant the installation of 6,000 kilowatts in generating capacity, including reserve. The average head throughout the year will be approximately 75 feet, the elevation of the tail race being

about 8 feet above sea level. During the dry season it will be necessary to draw upon the storage in Gatun Lake. The maximum quantity of water diverted for hydroelectric development is approximately 7 per cent of the minimum water supply and is the excess which is not required for lockages, evaporation, and leakage.

The spillway-gate machine is designed to raise or lower, in approximately 10 minutes, a spillway Stoney crest gate for controlling the water levels of Gatun and Miraflores Lakes. It consists essentially of two counterweights, one at each end of the gate, connected to it by a screw and chain, the screw being moved vertically by means of a worm nut which is motor driven by a worm. The two screws at the gate ends are driven simultaneously through a driving shaft which is provided with a worm at each end for operating the worm nuts. The screws are held in a vertical position, and the hoisting chains pass over sheaves at the tops of the gate piers. The counterweights practically balance the weight of the gate, so that the machine has to overcome only the resistance to the movement of the gate due to water pressure. The machinery tunnel extends the full length of the spillway, within the dam, and contains all the operating machinery. The screws for lifting the gates pass through this tunnel, extending downward to the counterweights and upward to the hoisting chain through openings provided for the purpose. Bids were invited for 22 spillway-gate machines and a contract awarded.

On January 31 specifications were issued for the purchase of apparatus for the remote control and indication of the lock machinery and spillway gates. The system includes starting panels for the various sizes of motors and switches; also remote indicators for showing at the control switchboard the position of the various machines. Bids were opened on March 15 and contracts awarded.

For supplying electric current to operate the lock machinery 16 transformer rooms are provided in the locks at Gatun, 8 at Pedro Miguel, and 12 at Miraflores. Each transformer room is practically an independent substation, interconnected with the others in the same locks by means of primary feeders. Power is taken at 2,200 volts from the hydroelectric station and is transformed to 220 volts. Each room is to contain two 190 kilowatt power transformers, either one of which can carry the motor load of the section fed from one transformer room. All equipment, including primary feeders, will be in duplicate, to insure continuity of service. The transformer room will also contain a 25-kilowatt lighting transformer, a bank of 9 or 10 oil switches, a 7-panel, low-tension switchboard, and miscellaneous cable and terminal equipment. In designing the transformer rooms every effort was made to render all operations simple and foolproof, and care was used to avoid the possibility of shutdowns and operating troubles.

The general features of lock illumination, both exterior and interior, were fixed during the year. For exterior lighting concrete lamp standards will be erected on the coping of the locks approximately 100 feet apart throughout the entire length of each wall. In all there will be 211 lamp standards at Gatun, 131 at Pedro Miguel, and 169 at Miraflores, a total of 511. The standard is of special design and supports a reflector about 30 feet above the coping level. The reflector is intended to throw the light of a 400-watt Tungsten

lamp outward over a ship in the lock chamber and also to produce a uniform illumination over the surface of the wall, without the glare occasioned by the brilliancy of the lamp shining directly into the eyes of an approaching pilot. For interior lighting of operating tunnels and machinery rooms, deck lights have been arranged in the roof of the operating tunnels which will admit sufficient light in the daytime to permit of circulation. For use at night, or when repairing machinery, artificial illumination is provided by the ordinary 16-candlepower carbon filament lamps mounted in specially designed reflectors set in the concrete of the ceiling and walls. A total of about 7,000 lamps will be installed in all the locks.

The work of erecting the lock machinery was begun at Gatun in September, 1911, and at Pedro Miguel in January, 1912. Owing to delays in the receipt of machinery, the schedule of erection has not been adhered to in all cases, but the installation and erection are progressing as fast as deliveries permit. Nine thousand four hundred and fourteen feet of towing track, including the conductor slot channels, have been assembled, lined up, and tested, and a total of 2,348.9 cubic yards of concrete was laid in connection with the towing track and miter gate recess covers at a cost of $16.0344 per cubic yard.

Under the contract entered into on May 16, 1911, for the construction of the emergency dams, 2,786 tons of material were shipped from the various plants of the contractor in the United States, and it is expected that all of the material for the first two dams will be shipped before August 1. Shipments to the Isthmus were somewhat delayed, thereby interfering with the erection work, due to a stevedores' strike, so that of the amount shipped only about 1,700 tons were received on the Isthmus. The false work and the erection cranes for the east dam at Gatun were completed, which will enable the contractor to begin work immediately upon receipt of those pieces which are first required for erection. No work of any kind has been done at any of the other dam sites.

Contracts were made for the emergency dams and gate and girder hoisting machines, also for the electrical equipment for operating the machines. Satisfactory progress was made during the year; the first machine of each type was tested and the other machines advanced so that they will soon be ready for test. Tests of the worm gearing were carried out, so that the motor characteristics and the hand-operating mechanism could be adapted to the results of the tests.

Work on the detailed drawings for the floating caisson gates was continued during the year on the basis of the general design described in the last annual report. The plans for various decks have been drawn out and a detailed study made of the pumps and piping.

Contracts aggregating $3,683,306.29 were entered into during the year on specifications prepared by this division for various irons in connection with the locks, for electric locomotives, tracks, machines, pumps, electrical equipment; in short, for all necessary appliances for completely equipping the locks for satisfactory operation, except the machinery for the guard valves, which will be advertised in the near future, and the material for the transmission line which will connect the hydroelectric station at Gatun with the locks of the Pacific division.

To enable a pilot to keep his course up to the turning point it is necessary to have a range of two lights at each end of the longer tangents in prolongation of the sailing line. The prolongations of these tangents on which the lights are situated were covered by heavy growths of brush and timber, so that trocas had to be cut through the jungle until suitable locations were found. These trocas are the width of the canal at the beginning and narrow down to 480 feet at the end. During the year a total of 809.85 acres was cleared, at a cost of $22.7098 per acre, and 305,790 linear feet of trocas cut.

Field forces were organized and construction work begun on the range towers at the Pacific entrance September 1, 1911. The towers, which are of concrete, are being constructed by means of steel forms, which are designed for the three types of towers used in the Atlantic and Pacific sections. The forms are 4 feet in height and of such size as to be easily handled by two laborers. They are made in segmental sections or staves, and when the form is shifted to a higher position the desired taper is given by omitting a section entirely or substituting a narrower one. One set of forms answers for all towers of the type used in the sea-level sections and another set for all towers of Gatun Lake. The forms for the watch room and lantern room are set up and filled when the body of the tower has been finished. Eleven of the towers required by the system have been completed to date—Nos. 5 and 6, Atlantic section; Nos. 2, 9, 11, 13, and 14, Pacific section; Nos. 1, 21, 24, and 25, Gatun Lake section. In the construction of these towers 805.88 cubic yards of concrete were used, the larger portion reenforced. The position of 60 gas buoys was located, referenced and checked, and three beacons in the Gatun Lake section located. The illuminants will be gas and electricity, the latter wherever the light is sufficiently accessible. For the floating buoys and for the 23 towers and beacons, which are in inaccessible places, compressed acetylene, dissolved in acetone, has been adopted. White lights will be used throughout, and, in order to eliminate the possibility of conflicting the lights with one another and with the lights on shore, all range lights, beacons, and buoys will have individual characteristics formed by flashes and combinations of flashes of light and dark intervals. The candlepower of the range lights will vary, according to the length of the range, from about 2,500 to 15,000 candlepower. The most powerful ones will be those marking the sea channels at the Atlantic and Pacific entrances, which will be visible for from about 12.5 to 18 nautical miles. The beacons and buoy lights will have about 950 candlepower.

ATLANTIC DIVISION.

The work of this division embraces the construction of the locks and dam at Gatun, the quarry at Porto Bello, the sand supply from Nombre de Dios and elsewhere, the excavation between the locks and deep water in the Caribbean, the breakwater for the shelter of shipping and protection of the channel in Limon Bay, the municipal improvements in Colon and the various settlements embraced within the territorial limits of the division, and such sanitary engineering work within the same limits as is prescribed by the sanitary department. The work is in charge of Lieut. Col. William L. Sibert, United States Army, as division engineer.

At the close of the previous fiscal year the excavation necessary for the construction of so much of the Gatun Locks as lie above the lower caisson sills was completed, with the exception of the excavation for the lateral culverts in the lowest lock. This was completed during the fiscal year just ended by the removal of 8,888 cubic yards, at a cost of $2.9598 per cubic yard. The material to be excavated in order to permit the construction of the portions of the locks including the wing walls and approach pier at the north end consists, for the most part, of mud too soft to support steam shovels, as the water can not be entirely excluded, so that recourse must be had to dredging. A suction dredge operated in the area between December, 1908, and June, 1909, and again between January 1, 1911, and April 14, 1911. Nothing further was done until February 1, 1912, or until after the completion of the temporary dam which was mentioned in the last annual report and which was designed to prevent the water from flooding the locks during excavation. This dam, which was completed on January 15, 1912, is 46 feet 4 inches high by 200 feet long, and consists of a series of reenforced concrete buttresses supporting timbers. The amount of material used was 1,040 cubic yards of concrete and 98,736 feet b. m. of lumber. The cost of its construction was $36,092.91. The total amount removed by the dredges was 883,918 cubic yards, at a cost of $0.3129 per cubic yard, which includes a plant charge of $0.0410 for the cost of the temporary dam. It is estimated that 89,570 cubic yards will complete the excavation necessary to permit unwatering of the area, so that the construction of the wing walls and north center approach pier can be begun. In order to secure suitable foundation, it was necessary to excavate in places to a depth of 70 feet below sea level, which required closing the opening through which the dredges were admitted by an earth dam and lowering the water so that the dredges could work to this depth. The material removed by the dredges was pumped behind the levee constructed east of the Panama Railroad; a large portion escaped, filling the Mindi River and the French Canal where these two cross, but it is stated that none reached the new channel. After March 31, 1912, the material was pumped to the west of the canal prism.

As noted in the last annual report, the unloading plant in connection with the sand and stone deliveries consisted of the cableways and five derricks. From July 1, 1911, the cableways operated on a single shift of 9 hours until June 1, 1912; subsequent to this date occasional 12-hour shifts were worked to facilitate the delivery of sand from a new source of supply in the Chagres River. During the year the cableways unloaded 237,750 cubic yards of rock and 109,017 cubic yards of sand; they average 30.42 cubic yards per hour while in service, or 52.74 cubic yards per hour actual working time; in other words, 57.69 per cent of the time was consumed in unloading operations, the balance lost in waiting for barges, 26.35 per cent, and in other delays, 15.96 per cent. The five derricks were in use for unloading rock and sand until November 16, 1911, when the two sand derricks were put out of commission; the remaining three engaged in unloading rock ceased operations on April 29, 1912. During the time they were in service the derricks unloaded 139,148 cubic yards of rock and 53,768 cubic yards of sand—a total of 192,916 cubic yards of material. This material was unloaded by the derricks at an average

rate of 25.57 cubic yards per hour while in service and 49.87 cubic yards per hour in actual working time of unloading. The operating cost of handling material by cableways and derricks, exclusive of plant charges, was $0.1904 and $0.1574 per cubic yard, respectively. In addition to unloading, the cableways also transferred rock and sand from the stock piles to the tunnel hoppers, which added for the last quarter of the year $0.2646 per cubic yard of concrete laid.

When the deliveries of crushed stone from Porto Bello were stopped, the rock screen, which had been supplied by a derrick unloading directly from barges, was dismounted, placed on a car, and moved to one side of the rock-storage pile where the cableways have access to it, and since May 23, 1912, one duplex cableway has been employed exclusively with the rock screen. From July 1, 1911, until April 30, 1912, when the delivery of cement in barges was discontinued, the cement shed cranes unloaded 448,700 barrels of cement. On the latter date arrangements were made for delivering the remainder of the cement in cars, which will be unloaded by hand. The amount required at the end of the fiscal year for completing the work, in addition to that already in storage, was 190,000 barrels.

During the year an average of 4.30 of the eight 2-yard mixers installed in the construction plant furnished a total of 343,364 cubic yards of concrete (bucket measurement) and were operated daily, except Sundays, on the basis of 12 hours per day from July 1 to January 31, 1912, and 9 hours per day from February 1 to June 30, 1912, at the rate of 25.52 cubic yards per mixer per hour in service, or 59.25 cubic yards per hour at work. The auxiliary plant mixers, two in number, operated on an average of 9 hours a day until March 11, 1912, when the plant was shut down and dismantled; this plant mixed a total of 80,544 cubic yards of concrete (bucket measurement) during the year, an average of 22.20 cubic yards per mixer per hour in service, or 68.54 cubic yards per hour at work. An average of three ½-yard mixers, together with a small portion mixed by hand, produced a total of 15,758 cubic yards of concrete. The product of the construction-plant mixers was placed by cableways, or transferred by chutes to narrow-gauge equipment, from which the concrete was dumped in place. The cableways were operated 12 hours a day up to January 31, 1912, subsequent to which a 9-hour day was used. Of the time in service, 38.74 per cent was consumed in handling 309,534 cubic yards of concrete and large rock, 17.77 per cent in handling forms and irons, etc., and 43.49 per cent in delays. Each cableway handled an average of 31.46 cubic yards of rock and concrete per hour when engaged on that work. The narrow-gauge equipment handled, in addition to large stone, 100,990 cubic yards of concrete from mixers and 24,434 cubic yards previously handled by cableways.

Work on the upper or south approach pier was continued throughout the year on the fill reported in the last annual report. For the foundation of the wall a total of 73,695 linear feet of concrete piling was manufactured during the year, at a cost of $1.2156 per linear foot, and 75,474 feet were driven. As previously reported, difficulty was experienced with the longer concrete piles, and, because of this and also to expedite the work, 51,450 feet of creosoted piles were substituted. Reenforced concrete construction was used for the south approach pier and 31,000 cubic yards of concrete laid in it during

the year, completing about 67 per cent of it. The guide walls at the south end of the locks were completed and 6,000 cubic yards were placed for this purpose.

The total amount of masonry—concrete and large stone—laid by the concrete plant, auxiliary plant, portable mixers, and by hand aggregated for the year 451,025 cubic yards; of this amount, 59,883 cubic yards were reenforced. Of this total, 371,388 cubic yards were laid during the time the 12-hour day was used, so that only 79,637 cubic yards were laid since January 31, 1912. The division cost of the masonry was $7.7552 per cubic yard. The large stone laid in the concrete, aggregating 14,194 cubic yards, cost $1.3283 per cubic yard delivered in the concrete, resulting in a saving of $49,300. The total amount of concrete laid in the locks to the close of the fiscal year was 1,875,965 cubic yards, at an average cost of $7.1142 per cubic yard. On the basis of 2,000,000 cubic yards, the masonry work of the Gatun locks was 93.80 per cent completed.

The slides at the north end of the locks continued to give trouble during the year, interfering with the extension of the cableway tracks.

The back filling in rear of the side walls of all the locks was continued during the year. The back fill in the center wall of the upper and middle locks was completed. Material was secured from borrow pits and the excavation at Mindi, and a total of 922,215 cubic yards were placed behind the side walls, at a cost of $0.4615 per cubic yard. The amount of back fill placed during the year, added to that reported in the last annual report, makes a total of 1,462,074 cubic yards in place. The total fill in the center wall aggregates 97,291 cubic yards, at an average cost of $0.7692 per cubic yard.

Crushed stone for the concrete of the locks and spillway was obtained from the Porto Bello quarry until April 30, 1912, when the crusher plant was shut down, as it was estimated that there was a sufficient quantity in storage at Gatun to complete the concrete work. Though the eight-hour day was in force, the crushing plant was not operated at full capacity, as the output was limited to three barges per day subsequent to June 19, 1911. The total amount produced up to the time that the quarry was shut down aggregated 440,413 cubic yards, at an average cost of $1.4280 per cubic yard. The output of the crushers averaged 217.60 cubic yards per hour in service and 436.56 cubic yards per hour crushing. The material was transported to Gatun in barges, thence transferred to the stock piles. The cost delivered in the stock piles at Gatun averaged $2.4952 per cubic yard.

The Porto Bello quarry is also supplying rock for the outer stone armor of the breakwater at Toro Point. During the first month and a half of the fiscal year just ended work was continued on the dock for handling this stone and on the construction of tracks in the breakwater quarry. On August 18 production was begun and on November 20 one of the cranes ordered for the quarry was put into service. Work with this crane developed the fact that the stone could be loaded much more rapidly and economically by steam shovels, and the use of cranes for this purpose was accordingly abandoned. To enable the continuance in service of the locomotives and some of the cars employed in the quarry for the production of crushed stone, 42-inch gauge tracks in the breakwater quarry were

originally contemplated, but 18 additional flat cars which had been ordered as part of the equipment were lost in transit and the order was not duplicated, as experience indicated that the standard 5-foot gauge tracks would be more satisfactory. It was not practicable to release any of the standard equipment from work elsewhere on the canal, and the quarry was operated at a low rate of output with the incomplete narrow-gauge equipment and consequently at an increase in cost. The stone-bin dock was reenforced and changed to adapt it to the use of cranes for handling breakwater stone; it was practically completed on June 30. The breakwater quarry is on a site lower than the quarry for the crushed stone and is being developed in two benches. Each will have a breast of 60 feet at the highest point. Eleven hundred linear feet of the lower bench have been developed, and the length of the upper one will be practically 1,700 feet. The total amount quarried aggregated 65,133 cubic yards, at a cost of $2.7092 per cubic yard on board barges at Porto Bello.

Sand was obtained from Nombre de Dios by use of dredge *No. 4* until November 17, 1911, when the sand storage pile at Gatun was filled, the work was closed down, and the plant removed. The operations of other departments at this locality also ceased. The total amount secured from July 1, 1911, to this date, 144,123 cubic yards, was transported in barges to Gatun. The cost per cubic yard in the stock pile was $2.2414. Chamé sand was procured from the Pacific division during January, February, and March, when the Pacific division's equipment was not sufficient to permit further shipments; a total of 20,315 cubic yards was placed in the stock pile from this source, at a cost of $1.7079 per cubic yard, including an arbitrary of $0.7890 for the unabsorbed plant at Nombre de Dios. On May 3, 1912, the division engineer was authorized to reopen sand operations at Nombre de Dios for obtaining by use of a suction dredge the balance of the sand needed for the locks and spillway; before this was done, however, it was decided to use the sand secured by one of the dredges from the old bed of the Chagres River, and since May 15, 40,531 cubic yards were obtained from this source; of this amount 1,771 cubic yards were placed in cars and the balance in barges, which were unloaded by cableways. The cost of this sand delivered in the stock pile was $1.2850 per cubic yard, including a Nombre de Dios plant charge of $0.7671. For the transportation of sand, stone, and cement an average of 3 tugs, including 1 stern-wheel towboat, 6 lighters, and 16 barges were in use. Under date of February 2, 1912, 1 tugboat and 3 barges were sent around to the Pacific side of the canal, with the intention of increasing the equipment at this locality so as to furnish the balance of the sand required by the Atlantic division. The tug and barges left Cristobal February 11, 1912, and arrived at Balboa June 17, 1912. The source of sand supply from the old Chagres River bed renders unnecessary the further procurement of sand from the Pacific division.

At the close of the previous fiscal year the dry fills for the east portion of the Gatun Dam, extending from the locks to the spillway, had been raised to an elevation of 85 feet and the hydraulic fill to 73 feet above mean sea level, while the north and south dry fills of the portion west of the spillway were at an elevation of 60 feet and 67 feet above sea level, respectively, and the hydraulic fill between the dry fills at 57.3 feet above sea level. At the close of the fiscal year

just ended sufficient material had been added to raise the dam for a length of 1,000 feet east of the spillway to an elevation of 103.35 feet; for the balance of the portion east of the spillway the dry fills had reached a general elevation of 96 feet and the hydraulic fill between them a general elevation of 85 feet; for the portion of the dam west of the spillway, the north and south fills had reached a general elevation of 98 feet and the hydraulic fill an elevation varying from 87 feet at the spillway to 78 feet at the drains located in the northwest corner. In securing the increases in elevation noted the cross sections taken in June, 1912, show that the dry fill was increased by 2,544,526 cubic yards and the hydraulic fill by 2,543,086 cubic yards. In obtaining this amount of 5,087,612 cubic yards of net fill, 9,048,896 cubic yards of material (borrow pit measurement) were handled; in other words, there was a loss of 43.8 per cent. The dry fill in place in the dam shows a loss of 15.53 per cent resulting from consolidation in the mass of the dry fill and from its intermixture with the hydraulic material. The wet fill, measured in place, shows that a loss of 56 per cent resulted, due mainly to waste of soft material in suspension through the drain pipes, leakage from the pipes, and general consolidation. The cost per cubic yard of dry fill averaged $0.5174 and for wet fill $0.3844 per cubic yard, on the basis of material handled; on the basis of actual increase in the dam, these costs were $0.5303 and $0.3938, respectively. For use in the dry-fill portions of the dam, 1,465,596 cubic yards of spoil were obtained from the central division between July 1, 1911, and February 15, 1912, at a cost of $0.1040 per cubic yard delivered on the dam. On the latter date the old double-track line of the Panama Railroad south of Gatun was abandoned, necessitating a reduction in the number of trains per day that could be sent from Culebra Cut, if this source of supply were continued, as they were obliged to operate over the single track of the relocation. To supply the additional amount that could be used economically, borrow pits must be opened, and, on the estimate that all the dry fill could be secured subsequent to this date more cheaply from borrow pits in the hills west of the dam, the delivery of spoil from Culebra Cut was stopped and the borrow pits as a source of supply were adopted. From two to six steam shovels operating in these pits and in the vicinity of the spillway removed 1,467,675 cubic yards at a cost of $0.3027 per cubic yard delivered on the dam. In addition to the foregoing sources of supply, 15,962 cubic yards were obtained from the excavation through the Mindi Hills, 62,689 cubic yards from power house excavation, and 448 cubic yards from lock excavation.

The hydraulic fill was pumped into the dam by five pipe-line dredges working in borrow pits upward of one and a half miles distant, the maximum lift of the material being 100 feet. Two of them worked south of the dam and three north of that structure; of the latter, one worked only about three months of the year in this locality. For the longer pipe lines and higher lifts, one or two relay pumps were installed to assist the dredges. One of the dredges on the south side worked between February 1 and July 6 in pumping material along the south toe of the extreme western portion of the dam, spreading the foundation of the structure in order to overcome the slipping that was taking place in the blanket over the face of the hill on the west on which the dam rests. It handled 582,410

cubic yards in this work. The other dredge on the south side handled 594,495 cubic yards of material in spreading the fill which had been made to support the south approach pier of the locks, and which began to settle under the weight of the pier. Of this total amount, 36,000 cubic yards were handled in September, 1911, the balance between January 1 and May 31, 1912.

The original plan of the dam, given in the report of the Board of Consulting Engineers for the Panama Canal, dated February 5, 1906, contemplated a width of 100 feet at a height of 135 feet above sea level, with side slopes on the upstream side of 1 on 3 to elevation 90 and then 1 on 2 to elevation 135. On the downstream face the slopes, starting at the top, were to be 1 on 2 down to elevation 88, then 1 on 25 to elevation 20, 1 on 50 for the next 10 feet in elevation, terminating with a slope of 1 on 2 to sea level.

During 1908 difficulty was experienced with one of the Panama Railroad embankments on the relocation south of Gatun, which necessitated spreading the lower courses of the fill. In this case the slope of the line joining the top of the completed embankment with the bottom edge of the bench which was constructed to spread the foundation over the relatively soft area was between 1 on 7 and 1 on 8. Assuming this for the slope of the dam, the division engineer prepared a plan of cross section in January, 1909, in which the upstream slope from elevation 60 was fixed at 1 on 7.67 to elevation 105, where the width was 100 feet, and the downstream slope was 1 on 11.63, continuing to elevation 30.

In 1909, when the board of engineers appointed by the President visited the Isthmus with the President elect, for the purpose of reviewing the project to determine whether any change should be made as the result of the slip which had occurred in the rock fill on the south toe of the dam, the proposition of reducing the height of the dam and flattening the slopes was submitted to it. The board's report was accompanied by a typical cross section of the dam which it advocated and which was adopted. The height of the dam had been reduced 20 feet, or from elevation 135 feet to elevation 115 feet. The slopes on the upstream side are 1 on 7.67 to elevation 90, with a horizontal berm 30 feet wide at elevation 60, and then 1 on 4 to the full height, or 115 feet. On the downstream side slopes from the top down were fixed at 1 on 4 to elevation 90, thence 1 on 8 to elevation 60, from which to elevation 30, 1 on 16 was adopted. Below elevation 30, where a berm was provided, the slope was 1 on 8 to sea level. According to this cross section, which will be found in the annual report of 1909, the hydraulic fill was to extend to elevation 100, where it was to be 100 feet wide and topped by 15 feet of rock fill. On the upstream side the hydraulic fill was to have a slope of 1 on 2, and in the interval between this fill and a 10-foot thickness of rock on the outer slope of the dam was to be the "cheapest filling available." On the downstream side the hydraulic fill had a slope of 1 on 2 down to elevation 55, and thence to sea level on a slope about parallel to the slope of the dam, the interval between the fill and the exterior slope of the dam to be of the "cheapest filling available, rock fill preferred for surface of slopes."

The construction of the dam proceeded in accord with these recommendations, except that for construction purposes authority was

given to continue the practically 1 on 8 slopes on upward, the change of slopes to be made later. The cheapest filling available was that supplied by the dredges, and it was evident that if this did not dry out properly a condition might arise which would result in producing such a head against the dry fill that a blowout might occur. Accordingly, in November, 1909, instructions were given to increase the quantity of dry fill on both the upstream and downstream sides, encroaching if necessary into the hydraulic fill so as to secure, outside of the latter, masses such that any hydrostatic pressure that might be produced by the hydraulic fill would tend to act downward on the exterior masses instead of upward and outward. The drying out that had been tried in the dry season of 1910–11 showed an unsatisfactory condition regarding the consolidation of at least the central portion of the hydraulic fill in that part of the dam east of the spillway, but it was believed that if construction proceeded along the lines of the instructions given the soft material would be squeezed out as the height of the dam increased.

In order to determine the settlement that was taking place in the dam, observations were required on hubs located as described in the last annual report and a monthly record kept. These observations showed a gradual settlement until on October 12, 1911, a movement occurred in the east half of the dam. On the north side, for a length of approximately 1,000 feet, the top of the dry fill settled 4 or 5 feet. This vertical movement was accompanied by a horizontal movement, greatest at the 75-foot contour, where it amounted to 14.2 feet, and gradually diminishing down the slope to the 31-foot contour, where the horizontal displacement was about 3.2 feet in a length of about 700 feet. While the crest of the slope moved downward, the lower portions of the slope were bulged upward to a certain extent, measurements showing a rise of 1.25 feet on the 60-foot contour at a point 1,150 feet from the center of the spillway channel. The movement was within the dam, as was verified by a test pit sunk where the bulging was greatest, which also showed that the masses of dry fill desired had not been secured. Material was piled to the north of the 31-foot contour, giving additional weight to the toe, and a blanket of spoil sufficient to make a continuous slope from the 31-foot berm to the top of the dam was placed over the north face. There was no motion after this additional weight had been added other than the gradual settlement. In addition to these steps, instructions were issued to pump sand into the hydraulic fill along the 1,000-foot length where the settlement occurred at the top, and to bring the dry fill up on the regular slopes, gradually crowding the hydraulic fill until the distance between the dry fills on the two sides was 25 feet, after which the hydraulic fill was to be covered with red clay secured from the vicinity and properly tamped wet until a height of 103.35 feet was reached, where the thickness would be 100 feet. It is proposed to continue observations and ultimately to bring the dam to 105 feet above sea level and, if necessary, subsequently to raise it to the height originally advocated.

A movement occurred about the same time on the south slope, the greatest lateral motion being 6.5 feet on the 75-foot contour. On the 60-foot berm there was a lateral movement of 0.5 foot. A heavy toe was added on the 60-foot level, extending from the dam to the spillway channel wall and to the berm.

In adapting the cross section proposed by the board in 1909 to the ground, the slopes were modified where the dam is practically a blanket over the spur projecting from the hills on the west side against which the dam abuts, and here the plan proposed of making the upstream slope 1 on 4 and the downstream slope 1 on 5 was approved. As dry fill was added on the upstream face of the hill a condition developed indicating that the material on the bottom extending out from the foot of the hill would not bear the weight, so that it was necessary to flatten the slope, which was accordingly authorized to be 1 on 7.67. A heavy fill was placed on the ridge that was pushed up outside of the toe of this slope, and, in addition, one of the dredges operating to the south of the dam extended the foundation outside of the rock fill by distributing material over the bottom, thus adding to the spread given the foundations.

In the construction of the spillway work was confined during the first half of the year to the east and west flanks, where the abutments, ogee, and crest piers were completed to elevation 69, or the top of the dam. With the beginning of the dry season about two-thirds of the central section, which had been held at elevation 10 except for the construction piers, was inclosed with a cofferdam and the concrete work carried well above water level. The full closure was then made within the cofferdam covering the balance of the central section. Three Stoney gates and one cylindrical valve were installed to control the flow through the four undersluices. The program contemplated the completion of the central portion to elevation 50 by April 1, so that the lake could be allowed to rise to this height at the dam. This was done for the total length, except about 120 feet which remains at elevation 45, but this portion is to be built up to the required height in advance of the water reaching the 45-foot level. Though the gates controlling the undersluices were closed on April 30 and the lake allowed to rise, they were subsequently raised, as the noncompletion of the lock gates did not permit the proposed lake level. The sluice gates were raised and lowered, depending upon circumstances, until August 17, 1912, when the condition of the lock gates was such that they could be closed. On this date the lake had reached a height of 32.01 feet. A trestle was built from the eastward at elevation 95 and a derrick erected near the west abutment to enable construction work on the east and west flanks to proceed during the first half of the current year. The total amount of concrete laid was 58,666 cubic yards, at a cost of $7.0988 per cubic yard.

Plans prepared by the first division of the chief engineer's office for the hydroelectric power plant, which is to be constructed below the spillway, having been approved, excavation work was started by the Atlantic division in May, and the total amount accomplished during the year was 72,119 cubic yards, at an average cost of $0.3767 per cubic yard. During the year 10,062 cubic yards of back fill, at an average cost of $0.3898 per cubic yard, were placed about the spillway.

In the channel between Gatun locks and the Atlantic Ocean excavation in the dry was continued through the Mindi Hills and, with the exception of the dike separating the cut from the French canal, was completed on February 24, 1912. The sluicing operations reported last year were completed by the removal of 1,000 cubic yards of mud, at a cost of $2.5976 per cubic yard. Two steam shovels re-

moved 56,703 cubic yards of earth and 368,169 cubic yards of rock at an average cost of $0.5952 per cubic yard. When the dry excavation of the channel was completed the barrier was blown up, for which purpose 81,750 linear feet of drilling were done and 183,150 pounds of dynamite used. Of the amount of material removed from Mindi in the dry, about 350,000 cubic yards of rock were used for back filling at Gatun, the cost of dumping being charged to the locks.

The dredges which operated between the Mindi Hills and deep water in the Caribbean in excavating from the canal prism were the seagoing dredge *Caribbean*, 5-yard dipper dredges *Chagres* and *Mindi*, and the French ladder dredges *No. 1* and *No. 5*. They removed 3,859,445 cubic yards of earth and 495,595 cubic yards of rock. Channel silting during the year amounted to 3,036,000 cubic yards, making the net earth excavation in this section 823,445 cubic yards. Between Mindi and Gatun dredges *No. 4* and *Sandpiper* removed 515,787 cubic yards of earth south of the old Panama Railroad line. The total amount of dredging in the prism aggregated 4,870,827 cubic yards, at an average cost of $0.2481 per cubic yard. In addition to the foregoing, material aggregating 883,918 cubic yards of earth and rock were removed just south of the locks, as already noted. Miscellaneous dredging outside of the prism included 3,762 cubic yards from the dry-dock slip, 72,798 cubic yards from the east diversion at Gatun, 23,496 cubic yards of earth and 872 cubic yards of rock from the east diversion at Mount Hope, 4,767 cubic yards of earth and 2,181 cubic yards of rock in front of the dynamite dock at Mindi, 80,296 cubic yards of earth from pit for rock dump north of Gatun Locks, 2,785 cubic yards of earth from in front of the fortification trestle at Mindi, and 2,450 cubic yards of earth from the slip at the cableways. The total output for the year from the canal prism and lock site aggregated 5,754,745 cubic yards, and from accessory works 444,327 cubic yards.

At the dry-dock shops the oxyacetylene and thermit welding processes were put in operation during the year, and the shops maintained the fleet of dredges, barges, and tugs in charge of the Atlantic division in working condition.

The breakwater extending out from Toro Point is intended for the protection of the harbor and the shelter of vessels against northers, and its line of direction is normal to prevailing winds during these storms. It is not intended to give protection against the waves produced by the trade winds, which generally are from the northeast. So far as the waves caused by the latter winds are concerned, it is the consensus of opinion among seafaring men that no shelter is necessary, and on this account the construction of the east breakwater, the commencement of which was postponed until the effect of the west breakwater could be ascertained, has not been undertaken. It will not be required, so far as available data now at hand indicate, to protect the harbor or shipping in case of northers, though the actual occurrence of such a storm may demonstrate to the contrary. It will not be required by shipping against the trade winds or the waves produced by them. It may, however, be necessary in order to protect the channel against the silting that results both from the wave action and from the erosion of the bank which is now taking place on the shore of the bay west of the channel. It appears that the effect of the west breakwater is to increase

the wave action on the beach at Colon, and it is possible that it may have some effect on the eroding process mentioned. What effect the mole being built for the protection of the new Panama Railroad wharves and adjacent anchorage basin at Cristobal will have is also unknown. The question is one of determining the relative cost of maintaining the channel by dredges, as compared with the cost of the breakwater. Another factor which enters into consideration is the final cost of the west breakwater. While the present indications point to the necessity of the construction of an east breakwater for the maintenance of the channel against silting, expenditures in this direction are not yet warranted.

During the past fiscal year 5,514 lineal feet of double track and 48 lineal feet of single track trestle were completed, making the total length of the trestle on July 1, 1912, 10,927 feet. Fill dumped from the trestle aggregated 460,040 cubic yards; in addition, 6,498 cubic yards were used for ballast and 4,680 cubic yards were furnished the fortifications, all of which was procured from the Toro Point quarry, which was shut down on June 22, 1912. Porto Bello rock for the exterior of the breakwater was delivered in August, 1911. The rock was shipped in barges, transferred to Lidgerwood trains by locomotive cranes, and plowed off on the north side of the trestle. During the year 65,133 cubic yards were unloaded in this way. Of the rock removed by the dredges from the canal prism, 510,780 cubic yards were dumped in the vicinity of the trestle. The cost of stone in the breakwater secured from the Toro Point quarry was $1.3832 per cubic yard; that from Porto Bello was placed at a cost of $4.6445 per cubic yard.

The filtration plant which was authorized for the Agua Clara Reservoir in January, 1911, was completed on December 29, 1911, at a total cost of $39,138.95. Due to shortage of water in Colon, Toro Point, and Porto Bello, water was transferred from the Gatun water supply in barges, from January 25 to May 23 to Toro Point, from May 10 to June 24 to Cristobal, and from May 9 to 16 to Porto Bello.

During the year the usual maintenance work was done on roads, sewers, and drains. Approximately 10,000 square yards of macadam were laid and repaired, 15,000 lineal feet of road ditches cleaned, 2,800 lineal feet of curb and gutter laid, and 3,000 feet of sewers installed. In addition, municipal improvements were carried on in Colon under an appropriation by Congress for the purpose.

Sanitary work consisted of cleaning and grading 336,000 linear feet of ditches; constructing approximately 8,000 linear feet of ditches, and lining with concrete approximately 2,300 linear feet of ditches.

CENTRAL DIVISION.

The work of this division embraces all the excavation between the Gatun Dam and Pedro Miguel Locks, including diversion channels, the construction of the Naos Island breakwater, clearing the timber from the channel and anchorage basin, municipal improvements in the various settlements included within the division limits, and such sanitary engineering work in the same area as is prescribed by the sanitary department. The work is in charge of Lieut. Col. D. D. Gaillard, United States Army, as division engineer.

The division is divided into four construction districts, as outlined in the last annual report.

The Chagres district extends from the Gatun Dam to the Chagres River at Gamboa, in which distance the Chagres River crosses the axis of the canal 23 times, thus forming a series of peninsulas which, beginning at Gamboa, are known as Point 1, Point 2, Point 3, etc. The material which remained to be removed July 1, 1911, in Point 1 consisted of gravel and sand carried down by the Chagres and deposited in the channel that had been excavated through this peninsula. In all 91,300 cubic yards of material were removed from this locality during the fiscal year just ended, of which 27,632 cubic yards were taken from the canal prism and the balance, 63,668 cubic yards, outside of the prism. The gravel removed was stored for use as ballast and in concrete work. The total amount in storage at the close of the fiscal year was 110,000 cubic yards.

No work was done at Points 2, 3, and 4; the material remaining to be removed consists of silt aggregating 58,300 cubic yards; it is intended to take this out by a suction dredge during the current fiscal year.

At Point 4–B 56,380 cubic yards were removed during the fiscal year; of this, 44,184 cubic yards were taken out by contract. A contract was entered into on December 6, 1910, for excavating about 112,450 cubic yards, at a cost of $0.2150 per cubic yard; afterwards increased to $0.3150, but little was done at the new rate. Work was begun in December, 1910, and on May 16, 1912, after removing 108,992 cubic yards, the contractor signified his inability to finish it. The work was therefore taken over and 12,196 cubic yards removed by the forces of the central division. There remained to be removed by dredges on June 30, 1912, 2,700 cubic yards.

At San Pablo the completion of the channel required the removal of the bed of the old line of the Panama Railroad, which could not be done until this line was abandoned. Work was commenced in January, 1912, and completed in May by the removal of 305,291 cubic yards, which finished the prism at this locality.

At Tabernilla excavation was commenced in March, 1912, and finished the same month by the removal of 22,893 cubic yards.

At Buena Vista 100 cubic yards were removed in March, thereby completing this part of the work.

At Bohio steam-shovel excavation was commenced in February, 1912, and finished in March; 6,997 cubic yards were removed.

At Pena Blanco 48 cubic yards were removed in March, 1912.

A contract for the removal of about 202,140 cubic yards between Tabernilla and Bohio was entered into on March 21, 1910. Work was commenced in October, 1910, and the contract completed in April, 1912, by the removal of 207,132 cubic yards, of which 101,600 cubic yards were removed during the present fiscal year, at a cost of $0.34 per cubic yard.

The excavation of the Panama Railroad embankment across the anchorage basin south of Gatun was commenced in March, 1912, and finished to grade 35 feet above sea level in the following month, and required the removal of 39,568 cubic yards.

A small force was engaged in blasting stumps and trees in the Gatun Lake Channel. The total amount expended for this work was

$2,029.51. Prior to August 31, 1911, this division also did the clearing work for the first division in connection with lighting the channel. The total clearing was 652.7 acres at $21.1390 per acre, involving running 49,547 feet of profile and cutting 163,310 feet of trochas at a cost of $0.0990 per lineal foot. Subsequent to August 31 this work was handled by forces under the first division of the chief engineer's office.

The total amount removed in the Chagres section during the year aggregated 560,509 cubic yards, leaving 151,000 cubic yards of wet excavation still remaining.

During the fiscal year 16,476,769 cubic yards of material were removed from the Culebra Cut and, from estimates prepared on July 1, 1912, 11,863,540 cubic yards remained to be removed in order to complete this section of the canal. The amount remaining was again increased over that reported a year ago by 3,595,000 cubic yards, in order to allow for slides already existing at the beginning of the fiscal year and for excavation along the upper levels of the banks of the canal, where slides had developed or were anticipated, and outside of the canal prism lines. The total amount of material removed during the year outside of the slope lines and because of slides aggregated 5,915,000 cubic yards, or 35.90 per cent of the total amount of material removed from the cut as against 30.07 per cent during the previous fiscal year. The total amount of material due to slides so far removed aggregates 16,671,000 cubic yards, and the estimated amount remaining is 3,595,000 cubic yards. The work in the cut has been retarded on account of slides and breaks in its banks which increased as the cut was deepened. The geological formation changes so frequently and suddenly that no treatment for slides has proven effective, when once developed, except that of excavating and hauling away the material composing the moving mass until the slide comes to rest or until the angle of repose for the particular material in motion is reached. At the Cucaracha slide, which has been practically at rest for over a year, the angle of repose is somewhat steeper than 1 on 5, while the Culebra slide on the west bank, where the material is still moving, the present slope is about 1 on 5. In the slide on the west bank of the canal just north of the village of Culebra, the moving material is of stratified rock moving in mass on a layer of lignite which has an inclination of 1 on 7. This slide devloped early in the dry season. These very flat slopes of the bank in the deepest portions of the cut explain the large amount of material added by slides and breaks over the original estimates. A number of relatively small slides developed as the cut was deepened, but the largest one now in motion is that which results from a break in the west bank of the canal at Culebra and covers an area of about 63 acres. From this slide 2,710,000 cubic yards were removed during the fiscal year just ended, making a total thus far taken out of 6,765,000 cubic yards, and leaving still to be handled an estimated amount of 1,300,000 cubic yards. The next largest slide lies on the east side of the cut, opposite Culebra, and covers an area of 50.7 acres. From this slide 1,960,000 cubic yards were removed during the past fiscal year, making a total of 4,290,000 cubic yards that have been taken out since it started, in 1907; it is estimated that 600,000 cubic yards still remain.

Work, begun in January, 1911, of decreasing the pressure on the banks where breaks might be expected was continued throughout the year, three steam shovels having been kept continuously at work terracing the west bank in the vicinity of Culebra, and the same number during the greater part of the year on similar work on the opposite bank. By removing the weight from the top of the banks there is less trouble and expense in maintaining the tracks at the bottom of the cut and less interference with drainage, two important considerations in prosecuting the work economically and expeditiously.

With the hope that it may allay some misapprehension which seems to be felt concerning the slides which are given sensational importance whenever any occur, attention is invited to a report on the subject prepared by Mr. Donald F. MacDonald, geologist.

Thus far increases in the estimates of material to be removed, made necessary by the slides, will cause no increase in the total estimated cost of Culebra Cut, as the division costs were reduced during the past year, effected in part by increased efficiency of the organization, by the fewer interruptions in the transportation service by slides and water, by the better conditions generally of the dumps, and by the upkeep of the output, due to the amount removed by the shovels on the upper reaches. It is also of interest to note that none of the slides which occurred during the year would have interfered with the passage of ships had the canal been in operation.

The summit of drainage in the cut is about opposite Culebra, and water south of this point was drained into the Pacific by pumping from a sump at Pedro Miguel until August 15, 1911, when arrangements were perfected for draining through the central culvert of the Pedro Miguel locks. The dike separating the cut on the north side from the Chagres River remained intact, and the pumping plant previously described continued in service to handle the water which drains to the north from the summit.

The diversion channel on the east side of the cut, for carrying the waters of the Obispo River and its tributaries, gave trouble during the year. In March, 1912, cracks appeared to the south of Empire suspension bridge, indicating a motion of the material lying between the diversion and the cut proper. Steps were taken to relocate this part of the diversion farther to the eastward, so that should a slide occur the waters of the diversion would not pour into the cut and interfere with work. Excavation was begun in April and finished during that month; in all, 26,168 cubic yards were removed; and the new portion is 1,970 feet long and located 510 feet east of the old diversion at its most distant point. The Empire-Paraiso wagon road and the railroad were reconstructed on the west bank of the new diversion. When the water was turned into the new channel the weight of the threatening bank was lightened by removing the material between the old portion of the diversion and the face of the cut. The slide on the east side of the canal, opposite Whitehouse, threatened to break back into the Obispo diversion at that point. While the movement of the material was slow, it was deemed safer to relocate the diversion about 100 feet eastward of its present location, and work with this in view was undertaken toward the close of the year. It will require about 500 feet of trestle and the removal of about 15,000 cubic yards of earth.

All trains loaded in the cut were hauled out at either end to the dumps. The dumps used for wasting material from the canal proper after February 15, when the service to Gatun was discontinued, were those at Miraflores and Balboa for trains run to the south, and the relocation dumps for trains run to the north over the Chagres River bridge. The material excavated from the high levels on both sides of the canal was wasted on local dumps, with the exception that a few of the Lidgerwood trains serving shovels at Rio Grande and Culebra were run over the Panama Railroad to the dumps at Miraflores and Balboa. For finishing the work at San Pablo, three old dumps were reopened and two new river dumps utilized. The Tabernilla dumps were reopened and used during March, 1912, for wasting a part of the material excavated at that point. Between the Balboa Y and Ancon and Sosa Hills 72 acres of marshy land that could not be drained properly were filled in, 1,022,591 cubic yards of material from the canal being used for this purpose. As this fill is for sanitary purposes, the excess cost of dumping over the average cost of dumping at Balboa is not included in the cost of the central division, but is held in a suspense account to be distributed later, depending upon the use to which the land may be put. Of the spoil hauled from the central division, 1,585,184 cubic yards were sent to Gatun for use on the dam in back fill of the locks; 2,872,950 cubic yards were wasted at Miraflores; 3,930,543 cubic yards were used at Balboa, partly in reclaiming swamp, partly in extending the breakwater, and the rest wasted; 5,268,890 cubic yards dumped along the relocation between Caimito and Gamboa.

In addition to the amount wasted on the central division dumps, which aggregated 15.259,391 cubic yards, 1,883,676 cubic yards were furnished other divisions. The material previously wasted at Miraflores, Balboa, and on the relocation dumps having settled firmly, it was found more economical to place a new layer or form a new dump on top of them than to start new ones.

The Naos Island Dike or Breakwater is to extend from the shore at East Balboa to Naos Island, a distance of 3.29 miles from the mainland, and is constructed for the purpose of cutting off silt-bearing currents from the excavated channel in the Pacific, thereby reducing the cost of maintenance and making navigation of the channel easier by eliminating the cross currents. In constructing the dike, a pile trestle is being driven toward the island from which material is dumped. Prior to June 30, 1911, the trestle had been constructed for a total distance from the shore line of 2.78 miles. During the fiscal year this trestle was extended 1,360 feet, giving a total length of trestle constructed to June 30, 1912, of 16,051 feet, or 3.04 miles. The length of the trestle on June 30, 1912, was 1,320 feet from Naos Island, and the fill was extended to within 2,000 feet of its end, or 3,320 feet from the island. Much trouble was experienced during the past two years in extending the fill, due to the sliding of the bottom under pressure, caused by the weight of the stone dumped from the trestle. The total vertical settlement at one locality on the dike during the year aggregated 125 feet. The elevation of the top of the trestle is 14 feet above mean tide, and the average depth of water for the last mile of trestle constructed is about 15 feet at mean tide, giving a total height of trestle of about 29 feet above the original bottom. When the rock is dumped from the trestle it begins to

settle as soon as it attains a height of a few feet, displacing adjacent material which, pushing up, forms a parallel ridge of mud. By the time the rock fill has been completed to full height these parallel ridges are about 80 feet from the center of the track. Experience shows also that the trestle is pushed out when the fill reaches the height of mean tide and cuts off communication beyond the break. To lessen the difficulties and to spread the foundations as much as possible, suitable material removed by the dredges in the channel was dumped in front of the trestle and spread for a considerable distance on either side of the center line. A board appointed to submit a plan for hastening progress on the construction of this breakwater recommended the building of a double trestle, dumping on either side, thereby spreading the fill and continuing the fill to mean tide out to the island, thereby saving the trestle, which is to be made more substantial than formerly. When the fill has been extended to the island it is to be carried to full height, commencing at the island; should a break then occur in the trestle, there would be considerable length of it left to fill over. This was approved, and the double trestle is being built. The total amount expended on the dike by the central division up to June 30, 1912, was $186,396.79. As the work when completed will be a benefit to the channel excavated south of Balboa, the Pacific division pays for the cost of the trestle, which has amounted to $70,558.01.

The average division cost of excavation for the year, including plant charges and all items which entered into its accomplishment, was $0.5101 per cubic yard.

The Empire machine shops continued under charge of the central division, making shop repairs and manufacturing repair parts for the steam shovels in use on the canal, until the close of the fiscal year, when they were transferred to the mechanical division. During the year 20 steam shovels were repaired in the shops. The night repair gang was continued for field repairs on the shovels, and the average number repaired in the cut each night was 14.

The construction of the Empire-Chorrera Road, which was commenced in April, 1911, was continued throughout the year. On June 30, 1912, macadam had been laid and rolled on 11,230 lineal feet. In addition to this, subgrading, including necessary concrete culverts and drains, was completed for a distance of 12,450 lineal feet. This is a 16-foot macadam road and will extend from the village of Empire to the Zone boundary, a distance of about 6 miles, and the Panama Government has promised to extend it to Chorrera.

The Empire-Paraiso Road was relocated for a distance of 2,480 feet and reconstructed. This was made necessary by the slide on the east bank of the canal.

In the village of Culebra 1,400 feet of road were reconstructed, on account of slides on the west bank of the canal. In the village of Golden Green 1,650 feet of road were constructed.

In December, 1911, it was realized that it would be necessary to install auxiliary pumps in the Chagres to assist the reservoirs in furnishing a sufficient amount of water for general use in the central division until such time as the rainy season should replenish the supply. Purchase was made of two 3-stage centrifugal pumps, belt driven, with a rated capacity of 2,000,000 gallons under a working pressure of 150 pounds, and they were installed under the Chagres

River bridge and put into service on January 24, 1912, acting as feeders for the mains on the east and west banks of the canal. During the latter part of February, on account of draining off the supply in the Carabali reservoir, the Chagres River pumping station was operated to supply water to the Gorgona shops for mechanical purposes. On March 12 a 6-inch line was completed connecting the Gorgona and Gamboa systems, supplying water to the Panama Railroad tank at Matachin, the town of Matachin, Jamaicatown, and the engine house at Gorgona shops. On April 18 an additional piston pump was installed on the Sardanilla River, which increased the supply for canal purposes at this point to 400,000 gallons per day. On June 8 a piston pump having a capacity of 1,500 gallons per minute under a working pressure of 250 pounds was procured from the Atlantic division and was installed by the date that the supply in the Camacho reservoir was exhausted. An underwriters' fire pump procured from the subsistence department was also installed in the Chagres River.

Sanitary work consisted of digging 5,763 lineal feet of ditches; regrading 311,061 lineal feet of ditches; cleaning 1,613,820 lineal feet of ditches; laying 550 lineal feet of tile drains; constructing 11,650 lineal feet of concrete gutters; cleaning 341,214 lineal feet of concrete drains; and clearing 6,536 square yards of brush and grass.

PACIFIC DIVISION.

The work of this division consists of the construction of the locks and dam at Pedro Miguel, the locks and dams at Miraflores, the Ancon quarry, dredging for sand at Chame, excavating a channel between the locks and below Miraflores Locks to deep water in the Pacific, municipal work in Panama and within the various settlements within the territorial limits of the division, and such sanitary engineering work as may be prescribed by the sanitary department within the same area. In addition, excavation necessary to prepare for work on the terminals, including coaling station, dry dock, and machine shops, was placed under this division. The work is in charge of Mr. S. B. Williamson as division engineer.

The excavation for the Pedro Miguel Locks, which was reported as completed at the end of the previous fiscal year, was extended to include 95,156 cubic yards removed during the last year from the French dump east of the site, making the total amount of excavation done by this division for Pedro Miguel Lock 1,130,236 cubic yards, exclusive of the material removed in preparing the foundations. The cost of the work during the last year was $0.3018 per cubic yard. In preparing the lock foundations, which consisted of removing material below floor level in order to secure footings for the walls, foundations for lateral culverts, sills, and sumps, 38,826 cubic yards were handled at a cost of $2.1715 per cubic yard. A large portion was removed with picks and shovels and loaded into skips which were handled by locomotive cranes or derricks into cars. Steam shovels were employed wherever practicable.

At the beginning of the fiscal year the construction plant had been moved to Miraflores, with the exception of two chamber cranes. The dismantling of these began on December 12 and February 7, respectively. The total amount of concrete laid during the year at Pedro

Miguel was 182,870 cubic yards, mixed entirely by the auxiliary plant, which consisted of one 2-yard mixer located at the south end of the east wall until September 25, two 2-yard mixers installed at the south end of the west storage trestle in the forebay, one of which was moved on March 15, and an average of 3.16 one-half yard mixers, which were moved about as considered most advantageous. Prior to dismantling, the chamber cranes handled 28,450 cubic yards of concrete supplied by the auxiliary plant and were also engaged in setting ironwork and filling the center wall. The remaining 154,420 cubic yards were handled either by locomotive cranes and derricks or poured into forms from the one-half yard mixers. The auxiliary mixers operated on an 8-hour-day basis and produced 36.12 cubic yards per mixer per hour working time and 20.96 cubic yards service time. The total yardage for the year was made up of 134,193 cubic yards of plain concrete, at an average cost of $5.7183 per cubic yard, and 48,677 cubic yards of reenforced concrete, at an average cost of $8.5195 per cubic yard. Revised estimates made on July 1, 1912, showed an increase of 61,761 cubic yards in the total amount of concrete previously estimated for these locks. The amount placed to June 30, 1912, was 847,926 cubic yards and the estimated amount remaining was 51,150 cubic yards.

Back filling behind the side walls was continued throughout the year, and a total of 371,212 cubic yards were placed, of which 186,518 cubic yards were back of the east wall, 162,757 cubic yards back of the west wall, and 21,937 cubic yards in the center wall. The cost of the back fill of the main walls averaged $0.3535 per cubic yard and in the center wall $0.9633 per cubic yard.

The drainage from the central division was turned through the culvert in the center wall at Pedro Miguel on August 15, which permitted the resumption of building the west dam, and 321,589 cubic yards were added during the year, at a cost of $0.5040 per cubic yard. The dam is 87 per cent completed. The excavation for the concrete core wall, to connect the dam with the wing wall of the lock, was begun and is 95 per cent completed; the amount of material removed was 3,937 cubic yards, at a cost of $1.5026 per cubic yard.

At Miraflores excavation of the lock pit was continued, and resulted in the removal of 624,747 cubic yards, exclusive of that for preparing foundations. Of the amount excavated, 120,351 cubic yards were of earth and 504,396 cubic yards were of rock. The average cost for lock excavation was $0.6566 per cubic yard. Of this total, 364,767 cubic yards were used for back filling and 259,980 cubic yards were placed in the toes of the west dam. The surface of the rock on which the Miraflores Locks are founded dips rapidly at the north end of the site. The walls were originally located with their northern extremities on rock which was only a few feet above the desired grade. After the excavation for the locks had been begun, changes in design necessitated extending the walls 98 feet farther north, thereby not only increasing the amount and depth of excavation required to secure suitable foundations, but adding materially to the difficulties and cost, in that the additional work had to be done in a confined space below the surface water level, and it was necessary to remove a number of construction tracks which had been located according to the original plan. In performing this work and preparing the lower lock foundations 165,145 cubic yards were removed, of which 26,832

cubic yards were of earth and the remainder of rock. The average cost was $1.5677 per cubic yard.

The construction plant, consisting of four berm and four chamber cranes, was described in the annual report of 1910, but the arrangement of cranes at Miraflores was changed since that report because of slides which developed at both the east and west sides of the lower lock. These interfered with the movements of the berm cranes, necessitating a different system of handling made possible by utilizing the construction locomotives and cars which had been used in connection with the plant at Pedro Miguel and no longer required at this locality. The slide at the lower end of the lower west chamber has been the source of greatest difficulty, has delayed the construction of the west wall, and materially increased the cost. Instead of erecting two chamber cranes in each lock, as was originally proposed, and supplying them with concrete for the center wall from the berm cranes, the four cranes were placed in the east chambers, two erected in the upper and two in the lower locks. The cantilevers occupy such a position that the longer arms extend entirely over the center wall instead of as indicated in the report for 1910. In addition, the supply of concrete is not furnished by the berm cranes, as originally intended, but by stationary mixing plants—two in number—one in the east wall of the upper lock and one in the east wall of the lower lock, each containing two 2-yard mixers. The concrete is delivered from the auxiliary mixers to the chamber cranes by narrow-gauge equipment operating over tracks laid on the lock floors. After completing the upper lock walls one of the chamber cranes was taken to the lower level, and at present there are three operating on the level of the lower lock.

On June 30, 1911, there were two berm cranes in operation at Miraflores, and the other two were put in commission on July 25 and October 28, respectively. They handled the concrete for the side walls, forms, and irons, and worked on a basis of an 8-hour day, except from December 21 to May 11, and from May 15 to June 8, when two cranes were operated on a basis of a 12-hour day. One of the cranes was operated 12 hours at various times, aggregating 17 days. They averaged 9.65 hours per day throughout the year. The eight mixers connected with them produced 409,651 cubic yards of concrete, at the rate of 38.06 cubic yards of concrete per mixer per hour of actual time working and 21.24 cubic yards per mixer per hour of service time. During the past year these cranes, while in service, were engaged 55.49 per cent of the time in mixing and placing concrete, and 6.51 per cent in handling forms, steel, or other material, the rest of the time being taken up in making repairs, 5.54 per cent; waiting for forms, 14.04 per cent; moving crane, 8.52 per cent; and other delays, 9.90 per cent.

The four chamber cranes were assembled and began placing concrete, handling forms, and steel on July 13, August 3, February 15, and March 26, respectively. The chamber cranes handled 234,520 cubic yards of concrete and 7,342 cubic yards of filling for center wall. They were operated on a basis of an 8-hour day, with the following exceptions: Two cranes worked 10 hours from September 21 to October 13, 1911; one crane worked 12 hours from March 5 to March 31; and two cranes from April 1 to June 30, 1912; an average of 10.23 hours per crane per day during the year. They placed an

average of 58.38 cubic yards of concrete and filling per hour actual working time, and they averaged 32.30 cubic yards of material per hour in service, consuming at this work 55.34 per cent of the total time in service. During 9 per cent of the time in service the cranes handled forms and other material, and delays amounted to 45.66 per cent, 14.58 per cent of which was waiting for forms.

The two auxiliary 2-yard mixers installed in the east wall of the upper locks supplied concrete until June 15, 1912, and from May 8 two 2-yard mixers installed on the east wall of the lower locks were operated, making an average of 2.09 mixers of this size for the year. They produced 253,450 cubic yards of concrete and operated on the same time as the chamber cranes, averaging 10.18 hours per day, or at the rate of 66.33 cubic yards of concrete per mixer per hour working time and 40.29 cubic yards service time.

In addition to the regular plant an average of 4.24 ½-yard portable mixers were used throughout the year, mainly in constructing the walls of the forebay and the upper reenforced concrete approach pier.

The total amount of concrete placed in the Miraflores locks during the past year was 751,540 cubic yards, made up of 729,096 cubic yards of plain and 22,444 cubic yards of reenforced concrete. The construction and auxiliary plants placed 401,079 cubic yards and 350,461 cubic yards, respectively. The total amount of masonry laid in the locks on the Pacific side was therefore 934,410 cubic yards and 174 cubic yards in the wing walls. The average cost of the concrete placed was $4.5867 per cubic yard of plain concrete and $10.6388 per cubic yard for reenforced concrete.

The total amount of concrete laid in the Pacific division locks to July 1, 1912, aggregated 1,874,029 cubic yards, at an average cost of $5.0264 per cubic yard. There remained to complete the locks 51,150 cubic yards at Pedro Miguel, as already noted, and 386,729 cubic yards at Miraflores; in addition, there will be required to complete the cut-off walls at Pedro Miguel 3,000 cubic yards and the dam at Miraflores 75,000 cubic yards.

Backfilling the lock walls was continued with material from locks and prism excavation below the locks, and 450,686 cubic yards were placed during the year, of which 315,487 cubic yards were placed back of the east wall, 127,287 cubic yards back of the west wall, and 7,912 cubic yards in the center wall, at costs of $0.4174 per cubic yard for that back of the side walls and $1.0126 per cubic yard for that in the center wall.

The crushed stone for concrete in the Pacific locks was obtained from the Ancon quarry which, with the crusher plant, was operated throughout the year. For the most part, the operation was on the basis of a 9-hour day, but for the last few months it was necessary to put on a night shift for a week or two at a time in order to supply the demand. The total amount produced by the plant was 839,279 cubic yards, at a cost of $0.6720 per cubic yard in the bins. The crushers produced 252.76 cubic yards per hour service time and 351.50 cubic yards per hour actual working time. Of the total amount crushed, 782,818 cubic yards were placed in the storage piles for use at the locks, 31,467 cubic yards were used in other work under charge of the division, 21,642 cubic yards were sold to other departments and divisions, and 3,352 cubic yards were used in municipal work.

The cost of stone delivered in the stock piles at the locks was $0.7996 per cubic yard.

Sand for the lock masonry and other concrete construction was obtained from Chamé Bay, located about 20 miles west of Balboa. It is secured by dredging, thence loaded into barges, towed to Balboa and transferred to bins by rapid unloading cranes. Of the three electric cranes two were operated eight hours per day and one held in reserve. During the year 564,837 cubic yards were unloaded, or an average of 115.94 cubic yards per hour in service, or 161.41 cubic yards per hour working, at an average operating cost of $0.1177 per cubic yard, exclusive of charges for plant. From the bins it is loaded by gravity into cars and transported to the storage piles at the lock sites or to such other points as may be desired. The total amount produced during the year was 564,837 cubic yards, at a cost of $0.5107 per cubic yard delivered in the bins. Of this amount, 509,587 cubic yards were placed in the storage piles for use in concrete, 34,394 cubic yards were delivered to the Atlantic division, and 20,856 cubic yards were delivered to other divisions. The cost of the sand in stock piles was $0.7025 per cubic yard.

The hydraulic fill in the west dam at Miraflores was completed on December 4, 1911, and contains 625,048 cubic yards, of which 78,316 cubic yards were pumped into the dam during the past year.

Dry filling was continued throughout the year; 425,125 cubic yards were placed, at an average division cost of $0.4044 per cubic yard. The dam is 87 per cent completed and the remaining work consists in connecting the north end of the present work and the lock wall over the space now occupied by the west storage trestle and train tracks.

Excavation of the channel by steam shovels between Pedro Miguel and Miraflores and south of the latter was continued; 864,475 cubic yards were removed during the year, of which 411,987 cubic yards were of earth and the remainder of rock. The average cost was $0.7527 per cubic yard.

The hydraulic excavation plant was in operation throughout the year in the sea-level section of the canal south of Miraflores and excavated 900,596 cubic yards of material. Of this amount, 78,316 cubic yards were dumped into the west dam at Miraflores and 822,280 cubic yards were deposited in the swamps east of the canal prism. The total cost of handling this material, earth and rock, was $0.5564 per cubic yard. The material deposited on adjacent swamps reclaimed 76 acres of tidal swamp land east of the prism.

The dredges operating in the canal during the year below Miraflores were the 20-inch seagoing suction dredge *Culebra*, the 5-yard dipper dredge *Cardenas*, three French ladder dredges, and, for a period of three months at the close of the fiscal year, the new ladder dredge *Corozal*. Operating in the prism the dredges worked between stations 2100 and 2236, or for a stretch of 13,600 feet, the lower end of which is 1,855 feet north of the French dock. During the year the dredges removed 4,683,902 cubic yards, at an average cost of $0.19 per cubic yard. Of this amount, 3,884,287 cubic yards were removed from the channel, including about 1,044.203 cubic yards in maintaining the channel, and 799,615 cubic yards outside of the canal prism in the vicinity of the terminals at Balboa, in maintaining the berth

at the sand dock, and in excavating a channel to Flamenco Island. Of the latter amount, 370,607 cubic yards were removed from the area of the basin in connection with the terminals on the Pacific side. The ladder dredges could not dredge economically on account of the depth of water at high tide, and rather than tie them up they were worked in this area pending action by Congress on recommendations relative to terminals. There remained at the close of the fiscal year to complete the excavation in the channel 4,194,059 cubic yards, including 700,000 cubic yards estimated allowance for silting.

South of station 2142 the rock that must be removed in order to secure the required depth lies in separate shoals of relatively small area and volume, and the rock is broken up for dredging by drilling under water with a drill scow and breaking below water with a Lobnitz rock breaker. Three drills were operated on the drill barge, on two 10-hour shifts, and covered an area of approximately 236,082 square feet, through which 153,819 lineal feet of holes were drilled. Of the amount broken up, 160,903 cubic yards were removed by dredging. By the rock-breaker method the area covered was approximately 563,617 square feet and the depth of penetration averaged 3.69 feet. The amount dredged from the area thus broken aggregated 77,156 cubic yards.

The dredge *Corozal* is a self-propelling center ladder dredge designed to excavate mud or sand at the rate of 1,200 cubic yards per hour from a depth of 50 feet and to discharge the spoil directly into hoppers of 1,020 cubic yards capacity or into barges alongside. Two sets of 39 buckets are provided, one set with a capacity of 54 cubic feet per bucket for use in soft material and the other set with a capacity of 34 cubic feet per bucket to be used when digging rock. The dredge was delivered by the contractors at Balboa on March 27, 1912.

No equipment was assembled or erected during the year at the Balboa shops and shipways. All necessary running repairs were made to the plant and floating equipment at these shops. The equipment, in addition to the dredges already enumerated, consisted of 5 tugs, 6 clapets, 7 dump scows, and 6 sand and 4 service barges.

In addition to the municipal improvements carried on in Panama under a separate appropriation made by Congress, municipal improvements consisted in replacing the 16-inch main from Rio Grande Reservoir by a 20-inch main at a cost of $158,562.87. The 16-inch pipe from the reservoir to the Pedro Miguel Locks was left in position, where, together with the 20-inch main, it is connected to a 24-inch pipe embedded in the emergency dam sills. Both mains were again connected on the east side of the locks and the double line extended to within 2,490 feet of the Ancon pumping supply. This was done not only to insure the supply and pressure at the south end of the system, but to avoid changing a large number of temporary connections already made for construction work with the 16-inch line. A second 10-inch line from the Cocoli pumping station to the main at Miraflores was also added. The Cocoli pumping and filtration plant, which was installed for the purpose of pumping water from the Cocoli Reservoir to make up the deficiency in the Rio Grande supply, was increased by the addition of two pumps. They are 3-stage, motor-driven centrifugal pumps, with a capacity of 1,500

gallons per minute each against a head of 300 feet, and are direct-connected with 200-horsepower, 3-phase, 25-cycle motors.

The reenforced concrete dock constructed for the Panama Railroad Co. by the Pacific division and described in the last annual report was completed during the year, including the back filling. The dredging in front of the wharf, aggregating 1,005,983 cubic yards, is not yet completed, but was advanced sufficiently to permit docking vessels for a length of 575 feet. Forty-five caissons were sunk to rock, the greatest depth found being 64.08 feet below mean tide and the least depth 52 feet below mean tide. The total cost of the dock was $351,741.39.

Borings were made over the area to be occupied by the dry docks, coaling station, terminal docks, and machine shops, and, based on these, permanent locations were selected.

Sanitary work consisted in cleaning 654,531 linear feet of earth drains; excavation of new earth drains, requiring the removal of 3,274 cubic yards of earth; sweeping 627,009 linear feet of cement drains; filling swamps and holes at various points, necessitating the handling of 975 cubic yards of material; laying 270 linear feet of tile drains; constructing 5,164 linear feet of cement drains; and clearing 112¾ acres of vegetation.

MUNICIPAL IMPROVEMENTS IN COLON AND PANAMA.

The act of March 4, 1909, making appropriations for the canal, included an item of $800,000 for extending the municipal improvements in Colon and Panama, to enable the growth of the cities beyond the areas the improvement of which was undertaken in 1905. The amount expended in the two cities will be added to the indebtedness previously incurred for this purpose, to be refunded through the collection of water rents at the end of the 50-year period.

Of the money appropriated, the sum of $550,000 was allotted for work in Colon, which was to be expended in the construction of the D Street storm sewer and filling in to the east of D Street, so as to give the height of 8.5 feet above sea level at the intersection of Ninth and E Streets, grading down to the elevations reached by the former improvements. Work was continued during the fiscal year, the suction dredge continuing operations until August, 1911, when it had added 129,939 cubic yards of material (borrow pit measurement) to that laid during the previous fiscal year, at an average division cost of $0.3533 per cubic yard, exclusive of the charge for plant. The total fill actually placed amounts to 585,527 cubic yards, showing a loss of 29.33 per cent from borrow pit measurement due to waste and consolidation. The average cost was $0.2999 per cubic yard. This fill was for lots as well as streets, the former paid for by the property owners, in this case the Panama Railroad Co., so that $52,311.52 were chargeable to the appropriation.

In addition to the fill, 9,826 lineal feet of water mains and 9,603 lineal feet of sewer lines were laid, 3,931 square yards of macadam added in surfacing D Street, 40,794 square yards of macadam laid in improved areas, including 1,560 square yards of resurfacing on other streets, 21,440 lineal feet of curb and gutter built, 1,590 square yards of concrete alleys, and 1,341 square yards of sidewalk con-

structed. Due to settlement, 2,015 lineal feet of curb and gutter were replaced. Chamé sand was used for concrete, and, except a small quantity from Ancon quarry used early in the year, the stone was from Porto Bello, from the cost of which the plant charge was deducted. During the year $84,528.41 were expended, making the total cost of improvements to June 30, $451,970.39.

Of the amount appropriated by Congress, $250,000 were allotted for improvements in the city of Panama. The work at first undertaken was completed. Survey and plans were made for developing the district bounded by the Zone Line Road, B Street, Fourth of July Avenue, and West Sixteenth Street, and the money was to be advanced by the Government of Panama in accordance with an agreement that the cost of all further municipal improvements in the two cities will be paid for by that Government. As the Government was unable to do this, as the improvements were required for sanitary purposes, and as there was an unexpended balance of the amount allotted for work in Panama, authority was given to make the improvements in accordance with the plans, and the work performed during the past year comprised grading and macadamizing streets, placing concrete curbs and gutters, and laying water mains and sewers in the portions of the city specified, as shown in the following table:

Improvements.	Ancon Boulevard.	Extension Avenue A.
Paving.....square feet..	170,337	3,332
Curbing.....lineal fee ..	17,004	272
Sewer mains..... do....	4,040	.....
Sewer laterals..... do....	1,515	.....
Water mains..... do....	4,347	.....
Water laterals..... do....	1,674	.....

The amount expended during the fiscal year was $38,745.05 and the total cost of the improvements in the city of Panama was $228,105.68.

SECOND DIVISION, CHIEF ENGINEER'S OFFICE.

This division has charge of all mechanical questions that may arise and supervises expenditures and allotments for the work. The third division of the chief engineer's office was abolished on January 24, 1912, after the resignation of Mr. C. M. Saville, assistant engineer formerly in charge, and the work transferred to the second division. To this division was also assigned the design of the dry dock, coaling stations, shops, and appliances in the form of harbor tugs, cranes, and barges. The division is in charge of Mr. H. H. Rousseau, United States Navy, as assistant to the chief engineer.

On the assumption that favorable legislation would be provided, general and detailed plans of the terminals were undertaken with a view to beginning work of construction as soon as funds should become available. The general layout of the terminals at the Atlantic and Pacific entrances to the canal is arranged with the object of affording sufficient wharves and piers to meet all requirements when the canal is opened, and at the same time to permit of extension in case future needs so require. In addition to wharf space

for vessels, the general plan provides the necessary facilities for docking and repairing all classes of vessels and for furnishing them with fuel, fresh water, and supplies of all kinds. As these facilities may be required for military purposes as well as commercial, all general plans were submitted to the Navy Department for its views, which have been followed in the final designs.

The main coaling plant at the Atlantic end of the canal will be located on the north end of the island opposite Dock No. 11, at Cristobal, with railroad connection across the French canal. It will be capable of handling and storing 200,000 tons of coal, with a possible increase of 50 per cent; 100,000 tons will be in subaqueous storage. The coaling plant at the Pacific terminus will be located at Balboa, adjacent to the site of the dry dock, and will be capable of handling and storing 100,000 tons of coal, with a possible increase of 50 per cent; subaqueous storage will be provided for 50,000 tons. Arrangements are made for supplying fuel oil, and four tanks of 40,000 barrels capacity each are under advertisement, which will give an initial storage capacity of 80,000 barrels at each terminus.

The piers or docks on the Atlantic side are to be protected against storms by a mole or breakwater extending out in prolongation of the line separating the Zone from Colon. They are to be 1,000 feet in length, 209 feet in width, and 300 feet apart. At present the Panama Railroad Co., to meet its own requirements, is engaged in building one of the piers, with a slip on either side, and a 1,000-foot wharf, together with the necessary length of mole or breakwater to afford protection. On the Pacific side the piers for commercial use will be placed at right angles to the axis of the canal, with the ends of the piers 2,650 feet from the center of the 500-foot canal channel. The piers will be 1,000 feet long and 200 feet wide, with 300-foot slips between the piers. The construction of one pier is to be undertaken. The superstructure of the commercial piers and wharves will be one-story steel sheds, with a clear height of 25 feet. The sheds, of fireproof construction, will cover the entire pier except for a space of about 18 feet along each side and the outer ends. A track will extend along each edge of the piers at floor level, and two tracks will run through the center of the pier sheds, so depressed as to bring the car floor level with the floors of the sheds. Much study was given to providing for the economical handling and storing of freight at the terminals, but the best type of cargo-handling appliances can not be determined at this time, as the amount of freight that will be moved from ship to ship at the terminals or will require storage is at present unknown.

The plans provide for one dry dock capable of accommodating any vessel that can pass through the canal locks. It will have a usable length of 1,000 feet, an entrance width of 110 feet, and a depth over the keel blocks of 35 feet at mean sea level. The dock will be built in the rock, which will be lined with concrete after it has been excavated. The borings indicate that the rock is strong, solid, and well suited for such construction. In lieu of the marine railway at first contemplated for smaller classes of vessels, an auxiliary dry dock will be provided, and a suitable foundation on similar rock has been found for it. This dock will have a usable length of 350 feet, a width at entrance of 71 feet, and a depth over the keel blocks

of 13½ feet at mean tide. On the Atlantic side the present dry dock at Cristobal, which has a usable length of 300 feet and a width at entrance of 50 feet, with a depth over the sill of 13 feet at mean sea level, will be retained.

Plans for the various shops, foundries, storehouses, and subsidiary buildings have been approved, and specifications are prepared for furnishing the material, as it is desirable to have the erection completed and the machine shops moved from Gorgona by July 1, 1913. The machines now in use will be installed in the new shops, and they will be electrically driven, both individual and group drives being used. The floor area of the buildings in connection with the shops aggregates 491,380 square feet. Until further requirements are more definitely developed, the shop facilities for emergency repairs will be retained in the vicinity of the dry dock at Cristobal.

For the expeditious and convenient handling of lock gate leaves, as well as for commercial and other canal needs and for general wrecking purposes, it will be necessary to provide a floating crane of the largest practicable capacity at each terminus of the canal. An investigation is now under way to determine the best manner in which these requirements can be filled.

For handling vessels of the largest size, harbor tugs of high power will be required and must be secured, as the tugs now owned by the commission will not be satisfactory or economical for that service. It is intended to provide two large harbor tugs at each end for this purpose.

It may be reasonably expected that a large quantity of coal will have to be furnished to shipping in barges or lighters, so that the canal must be equipped with a sufficient number, not only for this service but also for supplying fuel oil and fresh water. The Navy Department has recommended that provisions be made for sufficient lighters to give a capacity of 16,000 tons of coal for the Atlantic terminus and 8,000 tons for the Pacific end. This will be done.

During the year the locations of the permanent administration building and canal headquarters and the permanent settlements for employees have been determined. The permanent administration building will be on a knoll west of Ancon quarry, and quarters for employees attached thereto will be erected in the general area adjacent to and northeast of this building. Employees connected with the shops, docks, and other terminal facilities will be housed in quarters erected in the area surrounding the slope of Sosa Hill and on the fill adjoining the Ancon-Balboa highway. There will be a permanent settlement at Pedro Miguel for employees of the Pacific locks and one at Gatun for employees of the Atlantic locks. The settlement at Cristobal will be maintained and also the one at Ancon.

During the year a number of applications have been received from individuals and companies for leases of land in the vicinity of the Atlantic and Pacific terminals for various purposes connected with the operation of the canal. The question is now being considered with a view to making recommendations in the near future.

Three first-class meteorological stations at Ancon, Culebra, and Cristobal were continued during the year, each with a full complement of instruments and in charge of a skilled observer. There were two second-class stations at Gatun and Pedro Miguel, at which wind velocity, temperature, and rainfall were recorded. Twenty-six rain-

fall stations were in operation, 15 of which were equipped with standard and 11 with automatic rain gauges. Evaporation stations were in operation at Ancon, Rio Grande Reservoir, Gatun Lake, Brazos Brook Reservoir, and Colon. Two seismograph stations were in operation, one at Ancon and the other on Guarapo Island, near Gatun. Duplicate automatic tide registers are located on Dock No. 1 at Colon and two on the Panama Railroad Dock at Balboa. Gauging stations were maintained throughout the year, one on the Chagres River at Gatun, one at Gamboa, and one at Alhajuela. Automatic water-stage registers were put in operation above and below the spillway at Gatun and on the Chagres River at Bohio, Gamboa, Alhajuela, and Vigia. The automatic registers on the Trinidad and Pedro Miguel Rivers continued in operation throughout the year at the old locations.

From July 1, 1911, to July 1, 1912, the minimum dry season and total flow for 12 consecutive months for years of record occurred. The previous minimum dry-season flow occurred during the calendar year 1908. The total flow for the calendar year 1911 was the minimum flow for calendar years of record since 1905, and new low-water records were established at Alhajuela and Gamboa. At Alhajuela the minimum was 91 feet on April 20, 1912, and at Gamboa 43.5 feet on May 7 and 8, 1912. The previous low-water records were 91.86 at Alhajuela on April 26, 1905, and 44.40 at Gamboa on April 4, 1911. According to the discharge measurements at Gamboa, the heaviest freshet of the year occurred on August 21, 1911, when there was a rise at that point of 11.4 feet and the discharge was 35,120 cubic feet per second. The minimum flow at Gamboa during the year was on April 10 and 11, 1912, and the discharge was 250 cubic feet per second. Backwater from Lake Gatun interfered with gauging work on the Trinidad River, at Bohio, and on the Gatun River.

The temperature for the calendar year 1911 was generally above normal. July was the warmest month in Ancon and Culebra and December at Colon. The highest temperature recorded during the year was 95° F. at Ancon on October 16, and the lowest 65° F. at Culebra on March 27.

The rainfall in the Canal Zone during 1911 was below normal at all stations, being the lightest of record at Gamboa, Bohio, and several of the stations for which only a few years' records are available. The deficiencies ranged from 10 per cent at Balboa to 41 per cent at Bohio. The dry-season rainfall amounted to 12 per cent of the annual total in the Pacific section and 8 per cent and 9 per cent, respectively, in the central and Atlantic sections. The average rainfall for the calendar year 1911 was 67.20 inches in the Pacific section, 79.10 inches in the central section, and 116.45 inches in the Atlantic section. The number of rainy days in the Pacific section was 172, in the central section 214, and in the Atlantic section 265. The heaviest precipitation of the year occurred at Porto Bello on November 29, when during the storm 7.60 inches of rain fell in 12 hours, the maximum fall for 5 minutes being approximately 2.48 inches.

There was a moderate excess of wind movement at the various stations during 1911. The prevailing direction was from the northwest at Ancon and Culebra and from the north at Colon. The relative humidity was generally below normal during the year 1911 and

the first half of 1912; the mean for 1911 was 81 per cent at Ancon and 84 per cent at Culebra and Colon.

Slight seismic disturbances were of frequent occurrence during the year, but few were of sufficient intensity to be sensibly felt in the Canal Zone.

A stadia survey was made to locate the ridge line between the upper Gatun River and the Atlantic Ocean, and 19 miles of line were run between Mount Bruja and Santa Rita Mountain. A stadia survey was made of the Atlantic coast line in the vicinity of Margarita Island, near Colon, and a triangulation station was established on the island. The Majagual and Escondido Rivers were run up to the limits of tidewater. Several islands and inlets not heretofore shown on the maps were located.

There were no marked changes in the conduct of the mechanical work on the Isthmus during the past year. Constant efforts were made to reduce the cost of repairs to equipment and a marked reduction was made in car repairs. All the equipment has been growing older, and general repairs were required to a greater extent during the past fiscal year than during any previous one. This is especially true of locomotives, largely on account of stay bolts breaking, defective flues, and wearing out of tires.

The principal shops are located at Gorgona, and the policy of concentrating manufacturing work and repairs to rolling equipment at these shops has been continued. With the construction work drawing to a close, the general policy of gradually reducing the amount of repair parts and other material carried in the storehouses caused the mechanical division to handle more and more manufacturing work on short notice, and also resulted in the installation of a Tropenas 2-ton converter, blower, sand grinder, and all necessary apparatus for the manufacture of steel castings. Two additional pipe cutting and threading machines—one 8-inch and one 12-inch—were installed in the main shops, and in the planing mill the French horizontal compound engine, which formerly operated these shops, was replaced by a stationary engine removed from the Lirio planing mill and supplemented with a 50-horsepower motor.

Engine houses and repair shops were operated at Pedro Miguel, Gatun, Las Cascadas, Gamboa, and Gold Hill. The removal of material from the top of the slides on the Gold Hill side of the cut required the establishment of an engine house, and a temporary repair shop and storehouse, made of two old box cars, were installed, with the necessary storage and cleaning tracks. The Gatun machine and repair shop was transferred to the mechanical division, and on July 1, 1912, the Empire shops for the repair of steam shovels were also transferred to the same division.

The operation and maintenance of the air-compressor plants at Las Cascadas, Empire, Rio Grande, and Balboa are also under the mechanical division, as well as the operation and maintenance of the electric power and lighting plants at Cristobal, Gorgona, Empire, and Balboa. The output of all air-compressor plants operated during the year was 8,795,157,453 cubic feet of free air at 70° F., which was compressed and distributed at 100 pounds pressure, at an average cost for the year of $0.0312 per thousand cubic feet. The increased construction work on the Pacific division and the decrease of work on the north end of the Atlantic division increased the air consump-

tion at Pedro Miguel and Miraflores to such an extent as to necessitate the removal from the Las Cascadas plant and installation in the Aguadulce pumping plant of the Pacific division of two 2,200-foot Ingersoll-Rand compressors, with necessary boilers and pumps. The mechanical division's electric plants totaled an output of 4,966,953 kilowatt hours, which, with 2,279,151 kilowatt hours furnished by the construction divisions to the mechanical division, makes a total of 7,246,104 kilowatt hours distributed and billed by this division.

The total appropriations made by Congress up to June 30, 1912, amounted to $293,561,468.58. By act approved August 24, 1912, additional appropriations were made for the fiscal year 1913 amounting to $28,980,000, exclusive of fortifications. On June 30, 1912, $259,653,236.74, or about 69 per cent of the total estimated cost, had been charged into the work. Of this amount, $34,183,183.48 were expended during the fiscal year 1911, or about 9 per cent of the total estimated cost of the canal. The difference between the appropriations and the classified expenditures to June 30, 1912, amounting to $33,908,231.84, represents such items as receipts returned to the Treasury of the United States, unexpended balances of appropriations, unexpended material and supplies in storehouses, and other items that will not be prorated to construction work until the construction is completed; buildings of all descriptions, roads, sewers, and water supplies. Of the total classified expenditures to June 30, 1912, $32,547,720.75, or about 12½ per cent, were for plant and equipment for construction and for four steamships; of this amount, $1,254,697.70 were expended during the fiscal year 1912.

CONSTRUCTION OF THE NEW PANAMA RAILROAD.

The construction of the new or relocated line of the Panama Railroad was continued by the engineering department of the Panama Railroad Co. during the year and was in charge of Lieut. Frederick Mears, United States Army, as chief engineer of the Panama Railroad.

At the beginning of the year construction work was confined to the stretch of road from Gatun to Gamboa—the Gatun Valley section—and consisted in completing the embankments across the Quebrancha, Brazos, and Baja bottoms, which have been under construction since 1910. The amount of material reported as necessary at the beginning of the fiscal year for their completion, 850,000 cubic yards, was exceeded and, though they were practically completed on January 1, 1912, two steam shovels were at work during the following month and a half furnishing material for riprapping the slopes. The largest embankment on this section of the railroad is 4,800 feet long across the Brazos bottom. The rock in this valley is from 150 to 200 feet below the surface of the ground, which is of fairly good clay from 20 to 30 feet thick, but between this and the rock the material is very soft. The embankment, which is 60.70 feet high, was given side slopes of 1 on 2 with the hope that this would spread the foundation sufficiently to enable the layer of clay to support it without disturbing the soft strata. Just before the full height was reached, however, the pressure became too great and the soft material moved out, upheaving the natural ground beyond the toes of the slopes. When this occurred the base was widened so as to secure a slope of about 1 on 3

before any weight was added to the upper level, after which the embankment was completed to grade. Trouble with settlements was encountered in the fills over the Quebrancha and Baja bottoms, where it was necessary to spread the base so as to secure a slope of 1 on 4; these fills were 72.70 and 68.70 feet, respectively, above the natural surface of the ground. In the 3 miles covered by these bottoms, 4,736,072 cubic yards of material were placed, or an average of 1,578,690 cubic yards per mile, all necessary to secure a permanent roadbed above the proposed lake level.

Laying the remainder of the permanent track was undertaken in December, 1911, and completed as far as practicable by February 15, 1912. The track is of 90-pound open hearth steel, 100 per cent splice bars, and either creosoted or hardwood crossties fitted with "Economy" tie-plates and screw spikes. The track was ballasted with gravel obtained from the deposits in the Chagres River.

This section was formally turned over to the Panama Railroad Co. on February 15, 1912, on which date the operation of the road was transferred from the old to the new line. Trains now operate east of the canal as far as the north end of Culebra Cut, where they switch back across the canal on a construction dike to the old main line, following it north to Gorgona, thence south over the old route to Panama. The operation over the new roadbed was attended with no difficulties, except that in some cases small slides occurred along the slopes of the embankments. The work of riprapping the submerged embankments was continued and the weight of rock has sometimes caused the sides of the fill to slide, but has not interrupted operation.

The slides on the east side of Culebra Cut and the necessity of maintaining through communication caused the construction of a high line around Gold Hill and the abandonment of the original plan of carrying the railroad on the 95-foot berm through Culebra Cut. It was hoped that eventually the high line might be abandoned in favor of the 95-foot berm, but all thought of this has been given up on account of the excessive cost of rebuilding this berm throughout the cut. The Gold Hill line joins Gamboa bridge on the north with Pedro Miguel on the south, and is 9¾ miles long. The summit is near the La Pita divide at elevation 271 feet above mean sea level, and the continental divide is crossed opposite Culebra at an elevation of 241 feet above mean sea level. This section of the road was well under construction at the beginning of the fiscal year, and the work progressed to completion in the early part of 1912. Some difficulty was encountered along the Pedro Miguel River on account of slides. The laying of the permanent track was begun in May and the line was completed and formally turned over to the Panama Railroad Co. on May 25, 1912.

The construction of the telephone and telegraph line was continued during the year and completed on June 30, 1912. A new frame station building and section house were erected at the town site of Monto Lirio on the Gatun River, and a reenforced concrete water station constructed at Frijoles. Work of dismantling the old bridge at Barbacoas, consisting of three girder spans, was undertaken as soon as the original Panama Railroad was abandoned on February 15, 1912. The bridge was transferred to Monte Lirio, where it is to be used for carrying the relocated line over the Gatun River. The

two shore spans were set in place at the new site and the center span is to be converted into a balanced lift span, so that steamers can have access to the upper arm of Gatun Lake.

During the year 3,209,021 cubic yards of grading were completed at an average cost of $0.345027 per cubic yard, including the cost of clearing 28.7 acres, and 123,463 lineal feet of permanent track laid at a cost of $2.9863 per lineal foot; 1,820.2 cubic yards of concrete were placed in bridge culverts.

FORTIFICATIONS.

The act approved March 4, 1911, appropriated $2,000,000 for the construction of gun and mortar batteries for the defense of the canal against naval attack. The actual execution of the work was assigned to the commission, and the constructions are to conform to plans furnished by higher authority.

Work was commenced on August 7, 1911, under a provisional organization which continued until January 1, 1912, when the work was consolidated and placed in charge of Lieut. George R. Goethals, United States Army, reporting to the chief engineer.

During the year 408,392 cubic yards of excavation, at a cost of $0.571, were done, 5,159 cubic yards of concrete, at a cost of $9.055 per cubic yard, were laid, and a channel excavated to one of the islands by dredging 32,150 cubic yards, at a cost of $0.377 per cubic yard.

COST KEEPING.

The methods of cost keeping adopted on January 1, 1910, were continued throughout the year. In addition to those reported a year ago, cost accounts were prepared and kept for aids to navigation, terminal facilities at Balboa, fortifications, and installation of the lock-operating machinery. Supervision of cost data for the construction of the docks at Cristobal and the New Washington Hotel at Colon was added to the duties of the office; as these pieces of work are in charge of the Panama Railroad, their costs are not included in this report. The costs are made up of the labor engaged in and the material applied to the work, an arbitrary to absorb the cost of the plant and a proper proportion of the division overhead charges. As the plant was designed by the division engineers and, within limits, they are responsible for the organization carrying on the work, the costs are to a certain extent comparable where the character of the work is similar. The general expenses of the commission are prorated to different parts of the work and must be added to the division costs in order to determine the total cost. As the division engineers do not necessarily have control over the items which make up these general expenses, the costs reported are the division costs except where noted to the contrary. The cost-keeping accountant, Mr. Ad. Faure, reports directly to the chief engineer. His duties consist in supervising and verifying the statements of costs furnished by the division engineers, establishing accounts for new work, and preparing statistical data.

In the distribution of general expenses the central division continues to carry the larger proportion, due to the fact that prior to 1907 but little work was done except in this division, so that all the overhead charges were properly added to it.

Excavation in the prism by steam shovels was cheapest in the central division, averaging $0.5101; in the Atlantic division a lower cost is shown than during the previous year—$0.5952 against $0.6010—while in the Pacific division it is higher—$0.7527 against $0.6960—and also greater than in the Atlantic division. In the preparation of the foundations, the costs are higher in the Atlantic division than a year ago and lower in the Pacific division, while those of the Atlantic division are higher than in the Pacific division.

In dredging the costs were higher than for the previous year, and for work in the channels the Pacific division shows lower than the Atlantic division; the Pacific division dredging does not include any arbitrary for plant, the total cost of which was absorbed prior to the fiscal year, but on this side increase in depth is attended with additional expense because of the great tidal variations.

There was a total of 1,443,570 cubic yards of masonry laid in the locks and spillways during the year, as against 1,741,908 cubic yards during the previous year. The unit costs for the masonry were: Gatun Locks, $7.7552; Gatun spillway, $7.0988; Pedro Miguel Locks, $6.4640; Miraflores Locks, $4.7675. With a decrease in quantity laid of 512,315 cubic yards in the Gatun Locks, the cost of plain concrete last year shows an increase of $0.5398 as compared with the previous year. At Pedro Miguel, with a decrease in the amount laid of 363,609 cubic yards, there was an increase in cost of $1.0143, due to forms, placing, mixing, and plant arbitrary, the construction plant having been removed to Miraflores, with exception of two berm cranes, which were operated until December 12, 1911, and February 7, 1912, respectively. With an increase in quantity of 456,163 cubic yards, the cost of plain concrete at Miraflores shows a decrease of $0.0959. The labor costs for the year per cubic yard of plain concrete at the various locks and spillways show lowest at Miraflores, $0.8394; next, Gatun Locks, $1.3840; Pedro Miguel Locks, $1.4733; and Gatun spillway, $1.5425.

The difference between the costs in the Atlantic and Pacific divisions is mainly in the cost of cement, sand, and stone. While the cement for the Atlantic division is now handled in bags, it must pass through the cement shed, while the bulk of the cement in the Pacific division passes directly from the cars to the work. In the production of stone the cost in the storage bins at Gatun was $2.4952, while in the storage pile for the locks on the Pacific side it was $0.7996 per cubic yard, a difference of $1.6956 per cubic yard. If there be deducted from this difference the extra expense attached to the Porto Bello stone represented by the difference between the costs of towing and unloading and that of transportation by rail, amounting to $0.7365 per cubic yard, and the difference in plant arbitraries, amounting to $0.4336, the net difference in labor cost in favor of Ancon quarry is $0.5255 per cubic yard. Sand from Nombre de Dios in the stock piles in the Atlantic division averaged $2.2414 as against sand in the stock piles of the Pacific division at $0.7025, or an excess of $1.5389 per cubic yard in the cost of Nombre de Dios sand over that from Chamé. Chamé sand delivered in the stock pile at Gatun cost $1.7079, including $0.7890 for unabsorbed plant charge at Nombre de Dios. The sand secured from the Chagres River between May 15 and June 30 cost $1.2850 delivered in the stock pile, including $0.7671 for plant.

The cost of concrete piling at Gatun was $0.0679 less during the year than in 1911, while the cost in place was $0.7088 less. The total amount driven was 83,670 lineal feet, at a cost of $1.5719 per lineal foot; in addition, 51,450 lineal feet of wooden piles were driven, at a cost of $0.6516 per lineal foot. On this basis had wooden piling only been used for the south approach pier a saving of $77,001.50 would have resulted. In the Pacific division 6,580 lineal feet of wooden piling were driven for the foundations of the northeast wing wall, at a cost of $2.3200 per lineal foot.

In connection with division costs it is to be noted that the amounts paid for salaries of clerks and supervisory forces in the three construction divisions were less in the central and Pacific divisions during 1912 than those paid during the fiscal year 1911, while in the Atlantic division the percentage was higher. These percentages were as follows: Atlantic division, 26.09; central division, 17.39; Pacific division, 18.94.

QUARTERMASTER'S DEPARTMENT.

The quartermaster's department is charged with the recruitment of labor; care, furnishing, and assignment of quarters; distributing fuel, commissary supplies, and distilled water; construction and repair of all buildings; requisitioning for supplies of all kinds, together with the receipt and distribution of them on arrival; cutting of grass and disposal of night soil and garbage as prescribed by the sanitary department; and the auditing of all property returns. The department is in charge of Col. C. A. Devol, United States Army, as chief quartermaster.

There was no change in the organization of the department during the year.

The number of employees of the commission and Panama Railroad on the Isthmus fluctuated during the year; in March, 1910, the highest recorded force was reached, aggregating 38,376; on June 30, 1911, the force totaled 32,690 men, and on June 30, 1912, 34,957 men were employed by the two interests. While there was a decrease as between June 30, 1911, and June 30, 1912, of approximately 2,900 men in the Atlantic division and on the relocation of the Panama Railroad, this has been more than offset by increases because of the construction of the docks at Cristobal under the Panama Railroad, the terminals at Balboa under the Pacific division, the work of the first division of the chief engineer's office, and the fortifications. Immigration to the Isthmus continued to decrease, the excess of arrivals over departures for the year amounting to 3,510. At the beginning of the fiscal year 941 laborers were recruited in Barbados and the small islands adjacent thereto, in order to meet a demand for unskilled labor, which could not be recruited on the Isthmus from the unemployed living in the brush. The supply of and demand for labor was about balanced at the end of the year. During the last three months of the year 1,339 laborers were taken over by the United Fruit Co. for work in Guatemala.

The average number of American employees on the rolls of the commission during the year was 4,264, on the rolls of the Panama Railroad 837, or a total of 5,101. During the same period there were 2,123 separations from the service of the commission, 559 persons

employed in the United States and 1,286 employed on the Isthmus, indicating that more than 49 per cent of the force was changed.

There were 22 new buildings constructed during the year, at a total cost of $26,000; of these the fire station at Cristobal, the caretaker's residence at Brazos Brook reservoir, and a type 27 at Toro Point cost $21,000; the remaining 19 were small, costing $5,000. The fire station and the caretaker's house are permanent structures of concrete. Eighteen additions to existing buildings were made, at a cost of $71,000; of this amount $63,000 were expended for alterations and additions to the Hotel Tivoli. Thirty-six buildings were taken down in sections and moved to new locations, at a cost of $58,000. Fifteen buildings were demolished, material moved to other points and used in construction of 13 buildings, costing $26,790.30. Of these 51 buildings, 14 were removed from Culebra on account of slides and 25 from Tabernilla and San Pablo on account of the flooding of the lake area. The removal and reerection of American buildings still good, but useless in their old locations, accounts for the small amount of new construction. The purchase from the Pacific Mail Steamship Co. of their undivided half interest in the islands in the Pacific brought with it 22 buildings, which were utilized for quarters in connection with fortifications. Of old French buildings, 149 were sold, realizing $8,000, and 131 were demolished, a loss of 280 buildings. Of the 2,148 buildings turned over by the French in 1904 but 850 remain. The laborers' camp at White House and other buildings in the Las Cascadas district were altered and repaired as quarters for the Tenth Infantry, United States Army. These alterations and repairs were made at an expense of $50,000, payable from the appropriation for barracks and quarters, United States Army.

An analysis of the census of occupants of quarters shows a decrease of 300 in the number of Americans and an increase of 700 in the number of West Indians in quarters. The number of Europeans remains the same. Of the Americans, 210 are employees of the McClintic-Marshall Construction Co. This census also shows that 48 per cent of the married men and 20 per cent of the bachelors were hired prior to 1908. There has been no diminution in the demand for married quarters, the number of applications on file as of June 30 being 697, or 54 more than a year before.

The policy of reducing the stock concentrated in the storehouses, so as to leave, when the canal is completed, the smallest accumulation that is consistent with the continuous and efficient progress of the work and wise economy, has been continued. Relatively few annual contracts were made during the spring, as on certain classes of stock prospective requirements are so small that orders can be placed when needed. The quantity and value of supplies received from the United States were larger than during any previous year of the canal work. There were received 504,004 tons of material, with a value of $10,517,260.99. This does not include the piling nor material for the McClintic-Marshall Construction Co. There was a decrease in the cement receipts, but an increase in the amount of piling and of over 4,000,000 feet b. m. in lumber. A large amount of material was recovered from the work and returned to stock. The central and Atlantic divisions and the relocation, part of whose work was completed, turned in material to the value of $680,000. Clean-

ups of repair shops were made, and repair parts, fittings, and miscellaneous material were turned in in large quantities. The total amount of reduction in stock, including material turned in, was $1,652,969.34.

So far, but little of the commission's plant has been retired. Material to the value of $193,313.34 was surveyed and turned into the storehouse for obsolete material during the year, the amount remaining on hand at price-book prices being $369,000. The quantity was such that additional facilities had to be provided and an addition to the storehouse for obsolete material was constructed. Property to the value of $21,704.65 was reissued and $10,708.94 was disposed of by local sales from the storehouse for obsolete material. Much of the obsolete material and equipment was advertised for sale in February; the bids on 18 classes were rejected and awards made on 8 classes for the sum of $20,858.

On September 26, 1911, a contract was entered into for the sale of all French scrap on the Isthmus as it lies for a consideration of $215,000. Approximately 10,000 tons have been collected for shipment. About 4,603 tons of American scrap were collected at the Empire and Gorgona shops and stored at Mount Hope. Of this amount 1,892 tons were shipped and sold in New York at an average price of $10.35 per ton, the net price realized being about $5 per ton. Sales of scrap screening, rope, rubber, hose, and rubber belting continued throughout the year. A contract was entered into October 12, 1911, for delivery at New York of the screening at $8.25 per hundredweight, rope at $2.18 per hundredweight, rubber at $2.10 per hundredweight, and hose at $2.50 per hundredweight.

The work done for the sanitary department, consisting of grass and brush cutting, disposal of night soil and garbage, continued as heretofore. In accordance with the recommendations of a board, the grass-cutting areas in the various districts were plotted and measured and regulations compiled for sanitary inspectors and district quartermasters with reference to the method of handling work performed by the quartermaster's department for the department of sanitation. Less grass cutting has been done since January 9, 1912, as objection was raised by the sanitary department that keeping the grass cut close around quarters was not necessary except for æsthetic reasons, and that it could be allowed to grow a foot high, so far as sanitary purposes are concerned. As there are no funds available except for sanitary grass cutting, no work of this kind is done under existing regulations except on requests by the sanitary department. The cost of the sanitary work done by the quartermaster's department amounted to $251,768.07.

The regular delivery work done by the quartermaster's department was continued, and, in addition, delivery service was furnished to the Tenth Infantry. Horse mowing machines were introduced into all districts, which necessitates the use of more teams by the sanitary department. Twenty-four horses and mules were condemned and destroyed, 10 condemned and sold, 6 were killed, and 8 died—a total of 48. No animals have been purchased for over three years, and the service of those now in the corrals averages over six years.

The quartermaster's department attends to all purchases on the Isthmus, and the amount expended aggregated $2,639,416.09, of

which $1,540,700.65 were for the purchase of coal from the Panama Railroad Co., $978,055.26 for the purchase of crude oil from the Union Oil Co., and $96,176.24 for miscellaneous purchases from the Panama Railroad Co., leaving $24,035.94 for the purchase of miscellaneous supplies from local merchants. The balance was used for postage stamps.

SUBSISTENCE DEPARTMENT.

The subsistence department is charged with the operation of the Isthmian Canal Commission hotels, messes, and kitchens, and is in charge of Lieut. Col. Eugene T. Wilson, United States Army, as subsistence officer.

On June 30, 1912, this department was operating 19 line hotels, 3 night restaurants, 18 European laborers' messes, and 18 common laborers' kitchens—an increase of 2 messes and 4 kitchens over last year. The hotel and kitchen at Nombre de Dios and the hotel at Tabernilla were closed because of completion of the work at these points. One of the two messes at Bas Obispo was also closed. Hotels, messes, and kitchens were opened at Naos Island and Margarita Island, a mess and kitchen at Cerro, and kitchens at Rio Grande and Paraiso. The revenue from the line hotels, restaurants, messes, and kitchens was $1,263,869.81, an increase of $9,607.41 over the previous year. The total cost of operations was $1,226,352.16, an increase of $4,882.90. The profit was $37,517.65, an increase of $4,724.51 over the previous year. The total number of meals served in the line hotels was 2,075,335, 6.38 per cent less than during the previous year; the total number of rations served in European laborers' messes was 1,108,175, 5.09 per cent more than during the year previous; the total number of rations served in common laborers' kitchens was 584,457, 31.49 per cent more than during the previous year. The expenditures in salaries and wages for line hotels, restaurants, messes, and kitchens was $162,006.78, a saving of $10,022.74, as compared with the previous fiscal year. As the result of the year's operations, the line hotels and restaurants showed a loss of $12,085.37, the European laborers' messes showed a profit of $38,455.78, and the common laborers' kitchens showed a profit of $11,147.24.

The accommodations of the Hotel Tivoli were increased during the year by building to it a new wing, thereby increasing the number of rooms opening on private baths from 28 to 90. New furniture and other equipment to the value of approximately $10,000 were purchased, the greater part of this equipment being for the new rooms. The hotel was operated at a profit of $53,652.36.

EXAMINATION OF ACCOUNTS AND DISBURSEMENTS.

EXAMINATION OF ACCOUNTS.

The duties of the examiner of accounts were outlined in detail in the annual report of 1909 and have continued with but little change during the year just ended. The department was in charge of Mr. H. A. A. Smith.

The system of bookkeeping by which a record is kept of classified expenditures for the construction of the canal was extended to

include accounts for the department of law, terminal facilities at Cristobal and Balboa, lighting and buoying the canal, inspection of lock gates, installation of lock machinery, emergency dams, and the fortifications, with their usual detailed distribution. Since the establishment of the method of absorbing plant charges, begun July 1, 1909, a total of $25,226,779.74 has been charged to construction costs up to June 30, 1912, leaving a balance of $3,590,949.49 still to be absorbed. The classification of accounts recommended by the Commission on Economy and Efficiency for all Government departments would necessitate a radical departure from that now in use, and, because of the small remaining portion of the work of construction and the confusion that a change at this time would create, it was recommended that the new system be not put in force on the Isthmus until after the accounting method has been adopted for the operation and maintenance of the canal. This was approved by the President of the United States.

The financial accounts of employees making collections or reporting charges for collections were carefully audited. Bills against employees and outside parties for charges due the commission on account of services and materials increased during the year, the monthly average being 490.

The required administrative examination of the disbursing officer's accounts was made monthly. A careful check was made of unpaid salaries and wages representing amounts earned by employees, but for various reasons not collected. The balance, which has been accumulating since the beginning of the work, amounted to $238,634.02 on June 30, 1912.

Under the revised agreement with the Republic of Panama for the construction and maintenance of waterworks, sewers, and pavements within the cities of Panama and Colon and for the reimbursement of such expenditures to the United States, there were expended $1,432,110.68 in the city of Panama and $1,297,566.04 in the city of Colon, a total of $2,729,676.72, while during the same period $757,025.76 were reimbursed, of which $219,163.92 was for interest on outlay, leaving a balance due the United States of $2,191,814.88. Included in the reimbursed amount is $27,830.51, representing the value of water used by the Isthmian Canal Commission in the two cities.

There are 49 bonded employees engaged in issuing coupon books and meal tickets. During the year 593,900 coupon books and over 1,700,000 meal tickets were issued and proper collections made. On June 1, 1912, the method of selling commissary books for cash by the commissary department of the Panama Railroad Co. was installed at several points, in addition to the existing practice of issuing books for payment by pay-roll deduction. This practice reduced to some extent the work of the issuing clerks and increased the volume of business in the commissaries during the early and latter parts of the month on the days when the issue of commissary books was prohibited. The purchase and the issue of commissary books to issuing clerks were transfered to the Panama Railroad Co. on July 1, 1912. During the year $3,123,220.96 were paid the railroad company on account of commissary coupon books issued and collected by the commission.

The accounts of all bonded employees charged with the collection of funds were inspected at frequent and irregular periods, as in the past. A more complete and detailed checking of the accounts of post offices, hospitals, and Hotel Tivoli was instituted during the year, made necessary by the great and increasing volume of business and by the installation of the postal savings system. Effective November 1, 1909, the Illinois Surety Co. executed a schedule bond covering employees of the Isthmian Canal Commission and the Canal Zone Government who were required to give bond under the regulations, with the understanding that the bond was to run for a period of three years. To avoid the difficulties incident to a change in surety companies just as the canal work is being completed, arrangements were made with the surety company to continue the bond in effect from year to year from July 1, 1912, at the rate heretofore paid—$3 per thousand.

The number of claims audited and vouchers prepared during the year totaled 3,440, involving disbursements to the amount of $10,440,047.25, of which over $9,000,000 represents payments to the Panama Railroad Co. The increase in number of claims is largely due to payments to landowners and others in the region to be occupied by Gatun Lake. Unsettled claims at the end of the year amounted to $114,176.99, of which $73,107.05 included several large claims for land purchased but not yet completed for payment.

To the largest division of the office is assigned the duty of auditing the pay rolls of the commission and keeping up the personnel file of gold employees. There are 121 pay rolls each month, carrying in the aggregate over 36,000 payments involving approximate monthly disbursements of $1,500,000. They include not only the amount paid to each employee, but deductions made on account of amounts due the United States or the Panama Railroad Co. To this division is also assigned the duty of examining recommendations for meritorious sick leave, which during the year totaled 5,141 cases and resulted in payments amounting to $55,838.25.

In the time-inspection division the number of districts has been reduced to three, the senior inspectors being located at Ancon, Empire, and Gatun, and a reduction in the force of inspectors was made from 46 to 42 without detriment to the work.

Verification of the cash balance in the hands of the disbursing officer was made by witnessing the transfers of cash and cash values between the disbursing officer and his assistant on September 1 and November 1, 1911, and a complete check, including a count of all cash on hand, was made on December 15, 1911.

The examiner of accounts handles claims that arise under the employers' liability act. In accordance with section 5 of the act of March 4, 1911, claims totaling 1,849 were filed during the year on account of injuries received in the course of employment and 50 claims on account of deaths—a total of 1,899. Of these, 1,410 injury claims and 31 claims on account of death were allowed; 167 injury claims and 18 death claims were disapproved; 174 injury claims were for less than 15 days, hence were settled on pay rolls, and at the close of the year there were 98 injury and 1 death claims under investigation. The total amount paid out during the year in these claims was $259,993.14. From the effective date of the act (Aug. 1, 1908) to

June 30, 1912, $691,753.07 were paid to employees for injuries received in the course of employment, including meritorious sick leaves.

A new system of accounting will have to be introduced for the operation and maintenance of the canal, and all accounting on the Isthmus should be under one head. This will include receipts from tolls and from the sale of supplies of all kinds, and disbursements of appropriations by Congress, and of all collections resulting from sales of supplies which the law makes applicable for use; it should include property accountability, as well as collections, disbursements, and auditing of the Panama Railroad on the Isthmus and of the Canal Zone government; also cost keeping. The system should be an up-to-date accounting system and, as the Commission on Economy and Efficiency has established an accounting system for the various departments of the Government, it is believed that this commission is better able to prepare a proper system to meet the wants of the Isthmus than can be done by a board composed of men employed there. It has been recommended that this course be taken with a view to outlining and adopting a system to meet the new conditions at as early a date as practicable.

As already noted, Congress has appropriated $293,561,468.58 on account of canal work and chargeable against the authorized bond issue. To June 30, 1912, $5,856,426.77 were collected and returned to the Treasury as "miscellaneous receipts," and this amount should be deducted from the total appropriations in order to determine the net amount available for actual canal purposes. On the other hand, the commission has received benefit from moneys collected which was not expected when the estimates of 1908 were prepared, namely, water rentals paid by the Republic of Panama as a repayment of the amount expended in installing waterworks, sewers, and pavements in the cities of Panama and Colon, and the net receipts from the sale of scrap. To June 30 the commision has had the use of $625,654.54, received from the water rentals; $67,492.60, received from the sale of French scrap, and $98,605.75, received from the sale of American scrap, or a total of $791,752.89. The total amount available for canal work under its various departments to June 30, 1912, was, therefore, $288,496,794.70.

The examiner of accounts is also auditor for the Canal Zone government. He receives, examines, and settles all accounts pertaining to the revenues of the Canal Zone government and expenditures therefrom. This includes nearly 600 monthly accounts. The total revenues for the year were $370,272.81 and the expenditures $312,459.75. The increase in expenditures during the year is principally due to the increase in construction and maintenance of roads and trails and the payments made steamship companies on account of ocean transportation of mails covering the period from 1905 to the present time. There has been a falling off in revenues, due to the abandonment of some of the districts, and as other towns are abandoned the revenues obtained by taxation and rentals will continue to be reduced. During the year the average monthly balance in Washington was $1,121,707.64 and that on deposit on the Isthmus $43,625.73, the interest on which amounted to $20,784.96.

DISBURSEMENTS.

The work of this department embraces the securing of and disbursing the necessary funds and the accounting for all moneys paid out or collected, as well as the issuance of hotel and commissary books and meal tickets to the various departments of the commission. It is in charge of Mr. E. J. Williams, disbursing officer.

The total amount paid out by the disbursing officer on pay rolls aggregated $19,407,398.90, in addition to which $10,465,634.09 were paid out in settlement of public bills and on reimbursement vouchers. The value of hotel books, commissary books, and meal tickets issued totaled $4,591,510.50.

DEPARTMENTS OF CIVIL ADMINISTRATION AND LAW.

CIVIL ADMINISTRATION.

The organization of the department of civil administration remained substantially as described in former annual reports and continued in charge of Mr. Maurice H. Thatcher.

Five ordinances were enacted by the Isthmian Canal Commission and approved by the Secretary of War; the more important were for night quarantine inspection of vessels at the port of Colon; establishing market regulations for the Canal Zone, and instituting a reciprocal license tax upon motor vehicles licensed in the Canal Zone and in the Republic of Panama.

Negotiations carried on with the officials of the Republic of Panama included the following subjects: Charging of fees by Panama consuls in San Francisco for the certification of manifests covering shipments designed for the port of Ancon; adoption of laws and regulations by the Republic of Panama governing the navigation of waters under its jurisdiction uniform with those of the Canal Zone; occupancy of public lands of the Republic by persons forced to vacate lands in the Gatun Lake area; exercise of Canal Zone jurisdiction over Gatun Lake areas lying within the territory of the Republic; operation of the Chinese-exclusion law in the Republic and in the Zone; adjustment of automobile license taxes; interference with United States mails in the city of Colon; transfer by the Panama Railroad Co. to the Panama Government of certain lots in exchange for land situated opposite the Hotel Tivoli; operation of schools for Panaman children by the Government of Panama within the Canal Zone; extradition to the United States of persons charged with carrying on white-slave traffic; extradition from the Canal Zone to Panama of persons charged with crime; deportation of gamblers and other undesirable characters living in Panama and Colon; the operation of saloons in Colon near the Zone line; enforcement of the laws of the Republic prohibiting the recruiting of laborers; attempted exercise of police authority on Zone territory by police officers of the Republic; administration of estates of citizens of Panama who die in the Canal Zone; celebration of marriages in the Republic of Panama by Protestant ministers; customs inspection of baggage at the Panama City railroad station by officials of the Republic; repatriation of alien patients in the Ancon Insane Asylum at the expense of the Panama Government; the construction of build-

ings, streets, sewers, and other improvements; and the maintenance of proper water service in Colon and Panama. The relations of the commission with the Republic of Panama and with foreign representatives continued satisfactory.

In the last annual report recommendation was made for the depopulation of the Canal Zone, and the reasons on which it was based were stated therein. The question arose as to the number of people that would be affected if such a course were pursued. A census, taken as of June 23, 1908, over four years ago, showed the population to be 50,003, but the accuracy of this was questioned by the sanitary department, which at that time was reporting a population of upward of 70,000. This number had grown to over 90,000, and was so much in excess of the force report that the impression obtained that the number to be moved in case depopulation were resorted to would be upward of 20,000 or 30,000. It was therefore thought advisable to take a new census and to employ for it persons experienced in that line of work. Arrangements were made with the Census Bureau at Washington for transfer to the Isthmus of two of its experts, and the work was placed under the department of civil administration. The census, taken as of February 1, 1912, resulted in the following: Zone population (including the territory of the Canal Zone, the commission settlements at Porto Bello and Nombre de Dios, Colon Beach and Taboga Sanitarium), 62,810. Employees of the commission, Panama Railroad Co., and various canal contractors numbered, as of February 1, 1912, 42,174. Of the 62,810 persons enumerated in the Canal Zone, 1,521 were Colombians and 7,363 were Panamans; of the total 9,157, 4,870 were males. This number represents more closely the probable number that would be affected by the depopulation of the Zone. The total cost of the census was $12,815.74.

During the year the board of local inspectors issued 34 licenses to pilots; 9 to masters, 4 of which were issued as joint master-pilot licenses; 10 to mates; and 11 to engineers—a total of 64. There were also issued between July 1, 1911, and November 14, 1911, under the provisions of the law then in force, 15 certificates of seaworthiness to launches. Licenses were also issued to 97 chauffeurs under the provisions of the ordinance approved by the Secretary of War on April 26, 1911.

Postage sales for the fiscal year amounted to $87,694.41, an increase of $4,800.69 over the previous year. There were 145,633 registered letters and parcels handled, of which 47 per cent was official matter. Money orders to the number of 227,680, having a total value of $4,915,077.29, were issued, on which fees aggregating $22,889.90 were collected. Of the money orders issued during the year, orders amounting to $3,834,251.55 were made payable without and $1,080,825.74 within the limits of the Canal Zone. Under an Executive order dated September 8, 1911, a postal savings system was established on February 1, 1912, in the post offices of the Canal Zone. At the close of the fiscal year there was on deposit in these postal savings banks a total of $356,947. There were in the post offices of the Canal Zone on the same date unpaid money orders aggregating $332,141.60, drawn to the order of the remitter and payable at the office of issue.

During the year 327 vessels entered the port of Ancon, with a total tonnage of 619,422, and the same number of vessels cleared, with a

tonnage of 622,023. At Cristobal 284 vessels entered, with a tonnage of 784,156, and 282 vessels cleared, with a tonnage of 775,445.

On June 30, 1912, there were in force 858 leases, of which 575 were for building lots and 258 for agricultural lands—a decrease of 1,383 as compared with the number of leases in force on June 30, 1911. The leases for agricultural lands covered 352 hectares. Rents collected during the year amounted to $16,033.54. A total of $122,674.54 was collected from general taxes and licenses; of this amount, $5,083.71 were for distillation taxes; $55,200 for licenses for the sale of liquor at retail; $1,137.83 for license fees from insurance companies doing business in the Canal Zone; and $2,059 for licenses for motor vehicles.

During the year 60 estates were settled, and on June 30, 1912, there were 98 estates in the course of settlement. The money handled on account of the administration of estates was $7,306.31.

At the end of the fiscal year the organization of the police force remained the same as it was at the time the last annual report was written. There were 7,055 arrests made during the year, of which number 6,452 were males and 603 females. Of the total number of persons arrested, 79 per cent were convicted. On June 30, 1912, there were 141 convicts confined in the penitentiary at Culebra, who were kept at work on public roads, and the value of their work, on the basis of 10 cents an hour, was $28,126.95. The cost of guarding, subsisting, and clothing the convicts was $35,325.03. A stockade was erected on the Mandingo River for the temporary housing of convicts while building the Empire-Chorrera Road. Slides on the west bank of Culebra Cut made necessary the demolition of the penitentiary buildings at Culebra.

The only changes in the organization of the division of fire protection were a reduction of one in the number of firemen and the employment of a motor engineer. The new concrete fire station at Cristobal, described in the last annual report, was completed and occupied early in January. The small station at Balboa was removed to make room for the construction of the terminals at that point. The Tivoli station was altered to accommodate one of the two new combination automobile fire engines and hose wagons which were purchased during the year. There were 333 alarms of fire responded to, 18 of which were false. Of the 315 fires, 6 were in the city of Panama and 2 in the city of Colon; 196 were in Government property and 21 in property of the Panama Railroad Co. The value of Government and railroad property involved was reported to be $1,755,685.58. The total loss was estimated at $4,538.58 for Government property and $101 for property of the Panama Railroad Co. The largest fire on the Zone totally destroyed two private frame dwellings at Miraflores and caused a loss of $5,000. The year's fires resulted in 12 injuries from burns; two deaths occurred, one from the explosion of gasoline fumes and the other from an explosion of alcohol.

There was no change in the organization of the division of public works. In the city of Panama 1,985 water connections have been made to date, and on June 30, 1912, 35 applications were pending. The collections of water rents from private consumers for the first three quarters of the year in the city of Panama were $67,491.75, and

bills rendered for the last quarter aggregated $25,436.25. For the second and third quarters of the fiscal year the water collection exceeded requirements by $4,293.26, which amount was placed in the amortization fund to be applied to the reduction of the cost of waterworks, sewers, and pavements. In the city of Colon 731 connections have been made with water mains, and at the end of the year there were 45 applications pending. Collections in Colon from private consumers and from the commission and Panama Railroad Co. during the first three quarters amounted to $58,631.20, and the net amount of bills rendered for the fourth quarter was $20,623.80. The Republic of Panama paid $10,943.11 in order to liquidate its proportionate part of the cost of the water, sewer, and street systems. In the Canal Zone 691 water connections have been made. From the eight public markets in operation during the year a revenue of $4,183.95 was derived in rent.

The organization of the division of schools consisted of 1 superintendent, 2 clerks, 1 supervisor of primary grades, 2 supervisors of children, 1 principal of high school, 7 principals of grammar schools, 66 teachers, and 1 gardener, the last named being temporarily employed. The school year opened October 1, 1911, with an enrollment of 2,105 children—1,174 whites and 931 blacks. On June 30, 1912, 26 buildings were used, 11 for white schools and 15 for colored schools. Medical inspection of the pupils, inaugurated during the preceding year, was continued.

The supreme court held 12 sessions during the year. It affirmed decisions of the circuit court in 4 criminal cases and reversed the ruling of that court in 1 criminal case. At the beginning of the year 4 civil cases were pending in the supreme court, 6 were filed, and 8 disposed of. In the circuit courts 567 criminal cases were instituted, out of which number there were 353 convictions, 126 acquittals, and 84 dismissals, leaving 23 cases pending at the close of the year. There were 541 civil cases filed during the year, 414 of which were disposed of and 127 were pending on June 30, 1912. In the district courts 7,128 criminal cases were instituted, 5,183 convictions secured, 1,063 acquittals, 350 dismissals, 528 appeals to the circuit courts, leaving 4 cases pending at the close of the year. There were 1,305 civil actions brought, 1,280 of which were disposed of and 25 pending on June 30, 1912.

At the beginning of the fiscal year there were $197,207.56 in the Zone treasury, and during the year collections amounted to $370,272.81. Expenditures for the year totaled $312,459.75.

DEPARTMENT OF LAW.

The organization and duties of the department of law were described in detail in the last annual report and remained unchanged throughout the year. The department continued in charge of Judge Frank Feuille.

Congressional legislation affecting the canal was not enacted until after the close of the fiscal year. On August 24 the Panama Canal act was made effective and the sundry civil act approved on the same date, making appropriations for the current fiscal year, contains legislative provisions affecting the canal. In addition to the fore-

going, 16 Executive orders having the effect of law were issued during the year to provide for cases and conditions which had arisen and which necessitated the enactment of provisions to cover them. Copies of the laws and Executive orders are appended hereto, marked Appendix T.

Attention has already been called to the necessity of a revision of the Canal Zone laws, in order that legislation might be brought under one complete correlated system. The zone is now governed by laws of Colombia, of Panama, by executive orders of the President, and ordinances of the commission. The head of the department of law advocates remedying the existing faulty condition by embracing in one code all the Colombian and Panaman laws which it is deemed expedient to keep and repealing all the others. A revision of the administrative laws is also necessary, but nothing was done in the direction of either pending the attitude of Congress toward the canal and the Canal Zone. The work of revision has been assigned to the department of law.

The assistant prosecuting attorney handled criminal matters in the Zone during the past year and 615 such cases were disposed of in the three circuits, of which 398 resulted in convictions, 139 in acquittals, 66 in dismissals, and 12 in which the defendants were fugitives and were not arrested. This makes a considerable increase in the number of criminal cases as compared with the previous year, due in part to the large number of prosecutions for gambling and for violations of the navigation laws; an increase in the idle population is probably responsible to some extent. During the year four criminal cases were passed upon by the Supreme Court of the Canal Zone; two resulted in affirmance of the judgment of the circuit court, in one the trial court's finding was reversed, and the fourth was a habeas corpus proceeding brought originally in the supreme court.

Cases arise occasionally in which unlawful intrusions are made upon public lands, but there is no authority for anyone in the Canal Zone to submit the title of the United States to judicial ascertainment. If the land be needed for canal purposes, the intruders are ordered to leave, and on failure to do so are ejected by the police. When the lands intruded upon are not needed for construction purposes, appeal is taken to the courts in order to evict the occupants. On this theory several suits were instituted in the courts on behalf of the commission and 225 acres of land situated between the cemetery at Mount Hope and the quartermaster's corral at Cristobal were recovered for the United States and the Panama Railroad Co. Several disputed land claims are now pending which might be adjusted amicably if the commission or its representatives were authorized by Congress to agree upon boundary lines with the claimants.

Several small tracts of lands were acquired from private persons by deed, and the claims in these cases will not be submitted to the joint commission for an adjustment of the damages. The amount aggregated approximately 979 hectares and the consideration was $9,318. In addition 31 quitclaim deeds were taken by the Panama Railroad Co. from squatters at Toro Point; the consideration was $5,578.

Revocable licenses to the number of 295 were issued for 315 lots in town sites, calling for an annual rental of $2,529.09. The sum of

$1,536 was obtained from monthly licenses covering 27 rooms in houses belonging to the commission at Gorgona, and $900 additional for the rental of one house at the same place.

DEPARTMENT OF SANITATION.

This department has charge of sanitary work in the cities of Colon and Panama and. except oiling, it designates the sanitary work to be done in the Canal Zone, in order to accomplish the desired ends, to the construction divisions and district quartermasters, and it exercises such supervision as may be necessary to see that the work is done properly. In addition, the department has charge of hospitals and quarantine. It is in charge of Col. William C. Gorgas, United States Army, as chief sanitary officer.

The work in the terminal cities consists in cutting grass and brush, oiling pools, constructing and maintaining ditches for drainage purposes, removal of garbage and night soil, fumigation, and street cleaning. On account of the juxtaposition of Cristobal and Mount Hope to Colon, these are included in the Colon area, and for the same reason Ancon Hospital grounds are incorporated with Panama. According to the report submitted, the work done in Panama consisted in cleaning 398 miles of ditches, digging 2.5 miles of ditches, and clearing 118 acres of weeds and grass, in addition to oiling, disinfecting, and fumigating. In the Colon district, from the same source, 112.5 miles of ditches were maintained, 8 miles of ditches constructed, and 217 acres cleared of vegetation, in addition to oiling, disinfecting, fumigating, etc.

The impression is general elsewhere than on the Isthmus that the sanitary work, in the way of clearing land, extends over the entire area included within the limits of the Zone, so that it is interesting to note in this connection that of the 278,848 acres comprised within those limits less than 1,200 acres are kept cleared for sanitary purposes and on sanitary requests, outside of the military reservations, where the work is done by the troops. What clearing may be done around groups of squatters in the brush is not done under sanitary supervision nor for such purpose, and is relatively small. In addition, clearing is done for construction purposes, but almost the entire Zone is in its original condition as regards brush and jungle.

The total expense for sanitary work in the Canal Zone and in the cities of Panama and Colon was $596,608.73, of which $67,968.19 were for sanitation proper in the two cities, $409,205.84 for sanitation proper in the Zone, $18,672.50 for removal of garbage and street cleaning in the two cities, and $100,760.20 for removal of garbage and street cleaning in the Zone. Of the amount expended for sanitation proper in the Zone the construction divisions expended $89,725.17, principally in the maintenance of existing ditches and the construction of new ones for drainage purposes; the quartermaster's department, $93,876.26 for grass and brush cutting; the sanitary department used 719,835 gallons of oil, costing $18,862.81, and 124,718 gallons of larvacide, costing $23,751.64; the labor expense for distributing was $18,820.05 and $17,514.06, respectively. All work performed by the construction divisions and the quartermaster's department was done under the direction of the sanitary department, new

ditching being done in accordance with plans prepared by that department after consultation with the divisions interested. The removal of garbage and night soil in the Zone was done by the quartermaster's department.

Reporting on the health conditions on the Isthmus, the chief sanitary officer states that the total admissions to hospitals and sick camps, including those sick in quarters during the year, was 48,307; that the daily average sick was 22.91 out of every thousand employees as against 24.77 for 1910–11 and 23.01 for 1909–10 on the basis that the total numbers employed during the years mentioned were 50,008, 49,129, and 50,535, respectively; that the total number of deaths among employees was 508, of which 35 were Americans, 79 were white employees of other nationalities, and 394 were blacks; that the total number of deaths from violence among all employees was 154, as against 178 for the preceding year. In addition, on the recommendation of the medical examining board, 193 deportations were made, 141 for disease and 52 for injuries.

RECREATION OF EMPLOYEES.

On June 30, 1912, clubhouses were in operation at Corozal, Culebra, Empire, Gorgona, Gatun, Cristobal, and Porto Bello, under the supervision of the Young Men's Christian Association. During the year bowling alleys, locker rooms, shower baths, and a barber shop were added to the Corozal clubhouse at a cost of about $5,000.

The average monthly membership for the year was 1,944, as against 1,947 for the previous year. The smallest membership for any month was 1,784 for August, 1911, and the largest was 2,092 for June, 1912.

The total expenditures from commission funds for the support of these clubhouses aggregated $50,565.61.

WASHINGTON OFFICE.

The work of the Washington office was of the same scope as previously reported, and continued in charge of Maj. F. C. Boggs, United States Army.

During the year 1,296 persons within the United States were tendered employment for duty on the Isthmus in grades above that of laborer; 632 accepted and were appointed, covering 51 different positions.

The total amount of purchase orders placed for the fiscal year was $10,446,551.23. The most important contracts entered into were for permanent equipment in the form of structural lock material, $386,274.60; electric locomotives and tracks, $249,258.44; spillway gates and materials, $526,697.03; machinery for the operation of locks and spillways, $2,271,582.01; and hydroelectric station, $156,586.58. Other important purchases included 10,105,000 pounds of dynamite, 34,424,500 feet of lumber, and 7,259 gross tons of steel rails. Under a contract for 4,500,000 barrels of Portland cement entered into January 7, 1909, a total of 4,354,024 barrels has been shipped, of which 1,579,210 barrels were delivered during the past year.

During the year the three independent inspecting offices were continued for the inspection of lock gates and material which enter into construction of the locks and dams.

GENERAL REMARKS.

A year has passed since the last annual report, in which was noted the dates by which the various parts of the work were to be completed, and the situation has been modified somewhat, so that more accurate information can be given than was possible at that time. The division engineer of the central division reported at the close of the year that if no more material due to slides had to be removed than the increase which the revised estimates of July 1, 1912, contemplated, the excavation through Culebra Cut would be completed by July 1, 1913, or the same date as was fixed a year ago. Though additional slides have occurred since the close of the fiscal year, there has been no decrease in the force, so that it is still possible to complete it as predicted, though the date must depend upon the slides.

In the Atlantic division concrete work at the north end of the locks remains to be completed. As outlined in the report, excavation in the area below by dredging was not begun until February, 1912, and it is reported by the division engineer that, due to slides, the date for completing the concrete will now be June 30, 1913. On account of increase in the additional quantity of dry fill that must be added to the dam, July 1, 1913, is now the date fixed for completing this work, and August 1, 1913, is fixed as the date for completing the Gatun spillway.

In the Pacific division the division engineer now estimates that the locks will be completed in their entirety by January 1, 1913, by which date the dams at Pedro Miguel and Miraflores will also be finished, and that the spillway at Miraflores Locks will be completed by June 30, 1913. The delay of seven months in the delivery of the dredge *Corozal* threatened to cause a delay in completing the excavation in the channel below Miraflores by the amount that it was estimated the dredge would remove in that time. However, a large portion of this excavation will be done by steam shovels, thus reducing the length of time sufficiently to permit the completion of the channel by June 30, 1913.

As already noted, the contract for the lock gates has not been carried out as rapidly as was anticipated, and the contractor has been called upon to finish the gates in one flight of locks first, so that, if the rest of the work is in condition, passage of ships can be permitted by the use of one of the flights instead of both. While delays have occurred in the delivery of the lock machinery and accessories, the assistant chief engineer is so organizing his work as to have completed sufficient machinery to meet the conditions that the lock-gate contract will furnish. It is probable that certain features of the work will not be finished until some time after the first vessel passes the locks. These are features, such as the power-generating station, the transmission line, the aids to navigation, etc., which, though important in themselves, are not essential to the preliminary trial of the system.

The act of Congress approved March 4, 1911, provides that—

> Except in cases of emergency or conditions arising subsequent to and unforeseen at the time of the passage of this act, there shall not be employed at any time during the fiscal year nineteen hundred and twelve, under any of the foregoing appropriations for the Isthmian Canal, any greater number of persons than are specified in the notes submitted, respectively, in connection with

the estimates for each of said appropriations in the annual Book of Estimates for said year, nor shall there be paid to any such persons during that fiscal year any greater rate of compensation than was authorized to be paid to persons occupying the same or like positions on the first day of July, nineteen hundred and ten, and all employments made or compensation increased because of emergencies so arising shall be specifically set forth, with the reasons therefor, by the chairman of the commission in his report for the fiscal year nineteen hundred and twelve.

* * * * * * *

Respectfully submitted.

GEO. W. GOETHALS,
Colonel, Corps of Engineers, United States Army,
Chairman and Chief Engineer.

The Hon. HENRY L. STIMSON,
Secretary of War, Washington, D. C.

REPORT

OF THE

ATTORNEY GENERAL.

DEPARTMENT OF JUSTICE,
Washington, D. C., December 2, 1912.

To the Senate and House of Representatives of the United States of America in Congress assembled:

I have the honor to submit the following report of the business of the Department of Justice during the fiscal year ending June 30, 1912, as required by law:

The appropriations made for the conduct of the department proper, including that for special assistants to the Attorney General and for the United States attorneys, amounted to $2,664,620, being $227,520 in excess of those of the previous year. The total expenses of the department proper during the fiscal year 1911–12, including the offices of the Attorney General, all of the United States attorneys, and the assistants and special assistants to those officials, amounted to $2,532,560.23, an increase of $232,680.23 over those of the previous year. There was actually collected and paid into the Treasury of the United States during such year, as a result of suits brought or compromises effected by the department, the sum of $2,018,933.99, besides $730,136.16 collected by the Solicitor of the Treasury in compromise of claims not in suit, making an aggregate sum actually collected of $2,749,070.15.

During the four fiscal years 1909, 1910, 1911, and 1912 the total amount actually collected and paid into the Treasury of the United States through this department, including amounts collected by the Solicitor of the Treasury in compromise of claims not in suit, was $11,212,958.56. The aggregate amount so collected and paid during the four preceding fiscal years (1905, 1906, 1907, and 1908) was $3,597,442.43. The total expenses of the department proper during the fiscal years 1909, 1910, 1911, and 1912, including the offices of the Attorney General, all of the United States attorneys, and assistants and special assistants to those officials, amounted to $8,756,565.23, while the amounts expended for the same purposes during the four preceding fiscal years, 1905, 1906, 1907, and 1908, was $6,366,798.

So that while the expenses of the last four years exceeded those of the previous four years by $2,389,767.23, the collections during the last four years exceeded those of the earlier period by $7,615,516.13.

During the fiscal year ending June 30, 1912, 347 civil cases relating to the public domain were disposed of favorably to the Government, resulting in the recovery of 180,781 acres of public lands, and $291,503.10 in money; while 107 criminal cases for offenses connected with public lands were disposed of, resulting in the imposition of fines, penalties, and costs aggregating $24,674.39. During the four fiscal years 1909, 1910, 1911, and 1912, 1,095 civil cases relating to the public domain have been decided favorably to the Government, resulting in the recovery of 1,623,119 acres of public lands and the collection of $992,263.43 in money, while 455 criminal cases for offenses connected with public lands were disposed of, resulting in the collection of fines, penalties, and costs aggregating $185,091.31.

Without attempting to enumerate the number of all suits, actions, and prosecutions relating to other subjects, it may be mentioned that at the October term, 1911 (October, 1911, to May, 1912), 144 cases in which the United States was a party, or in which it had a substantial interest, were disposed of in the Supreme Court, the Government being appellant in 41 and appellee in 97 of them.

There were pending, undetermined, on March 4, 1909, 16 cases, civil and criminal, brought by the United States under the Sherman antitrust law, all of which have been disposed of except 2 now awaiting decision in the Supreme Court. Thirty-nine criminal indictments and thirty-one civil suits, under the Sherman antitrust law, have been brought since March 4, 1909, and up to September 1, 1912, while much time and attention has been devoted to the dissolution, pursuant to decrees of the court, of the American Tobacco Combination, and the Powder Trust, and a large number of investigations of complaints of violation of the antitrust law carried on which have not yet resulted in legal proceedings. During the last fiscal year 3,242 civil cases, to which the United States was a party, and 16,158 criminal prosecutions, were disposed of in the circuit and district courts, and 1,212 cases in the Court of Claims. Further statements of the work of the department will be found in the subsequent portions of this report.

PERSONNEL.

The staff of the department at Washington during the year has consisted of 48 attorneys, 133 clerks, and 48 subclerical employees in the classified service, and 25 laborers and other employees not in the classified service. That outside of Washington has consisted of 86 United States attorneys, 94 special assistants to the Attorney General and to United States attorneys, and 146 regular assistants to United

States attorneys; 64 clerical assistants to United States attorneys embraced in the classified service, and 83 employees not embraced in the classified service.

I take pleasure in recording my appreciation of the loyal, intelligent, and effective work done by the entire staff in the department during the past year. It has been characterized by tireless, persistent, and patriotic devotion to the interests of the Government.

* * * * * *

The work of the department during the past year will be summarized under the following heads:

PROSECUTIONS UNDER THE ANTITRUST LAW.

Only two decisions have been rendered by the Supreme Court since my last report in the enforcement of the antitrust law, viz:

1. That in United States *v.* St. Louis Terminal Association (224 U. S., 383), dealt with the unification of substantially every terminal facility by which the city of St. Louis is served. The court held that this constituted a combination in restraint of interstate trade within the meaning of the antitrust act; but in the light of the rule laid down in the case of Standard Oil Co. *v.* United States (221 U. S., 1–78), that in applying a remedy the court must not overlook the fact—

> that injury to the public by the prevention of an undue restraint on or the monopolization of trade or commerce is the foundation upon which the prohibitions of the statute rest; and, moreover, that one of the fundamental purposes of the statute is to protect, not to destroy, rights of property—

And finding that the combination—

> would not be an illegal restraint, under the terms of the statute if it were what is claimed for it, a proper terminal association acting as the impartial agent of every line which is under compulsion to use its instrumentalities;

The court said:

> If, as we have pointed out, the violation of the statute, in view of the inherent physical conditions, grows out of administrative conditions which may be eliminated and the obvious advantages of unification preserved, such a modification of the agreement between the terminal company and the proprietary companies as shall constitute the former the bona fide agent and servant of every railroad line which shall use its facilities, and an inhibition of certain methods of administration to which we have referred, will amply vindicate the wise purpose of the statute, and will preserve to the public a system of great public advantage.

The court therefore remanded the case to the district court with directions to enter a decree requiring the parties to submit to the

court, within a time specified, a plan for the reorganization of the contract between the 14 defendant railroad companies and the terminal company which had been pointed out as bringing the combination within the inhibition of the statute, by making certain provisions specified by the court, and if the parties should fail to come to an agreement, then the district court should, after hearing the parties, make such order and decree as should be necessary to dissolve the combination.

Following the entry of the mandate in the district court, a disagreement arose between the Government and the defendant companies, as to the sufficiency of a proposed agreement tendered by the defendants in purported compliance with the requirements of the Supreme Court, and over the further question whether or not, under the terms of the act of Congress of February 1, 1903 (32 Stats., 823), as amended June 25, 1910 (36 Stat., 854), known as the expedition act, a certificate having been filed in this case in conformity with the provisions of that act, a final decree approving or disapproving such plan could be entered in the district court by a single district judge, or by not less than three judges, as required by the expedition act. The four circuit judges differed on this latter question. The district judge thereupon announced his intention to enter the decree, whereupon, for the purpose of securing a determination of the question, the Government moved the Supreme Court at the present term for a writ of prohibition to restrain him from taking such action. The matter is pending undecided in the Supreme Court.

2. In the United States *v.* Standard Sanitary Mfg. Co., known as "the Bath Tub Trust" case, after the entry of the decree in favor of the Government by the district court in the district of Maryland in October, 1911, the defendants appealed to the Supreme Court, where the case was argued at the present term, and a decision rendered November 16, unanimously affirming the judgment of the district court. This judgment compels the dissolution of a combination of 16 corporations and 64 individuals, manufacturers of enameled ironware in various parts of the country.

The nature and effect of the combination was described by the court as follows:

> Before the agreements the manufacturers of enameled ware were independent and competitive. By the agreements they were combined, subjected themselves to certain rules and regulations, among others not to sell their product to the jobbers, except at a price fixed, not by trade and competitive conditions, but by the decision of the committee of six of their number, and zones of sales were created. And the jobbers were brought into the combination and made its subjection complete and its purpose successful. Unless they entered the combination they could obtain no enameled ware from any manufacturer who was

in the combination, and the condition of entry was not to resell to plumbers except at the prices determined by the manufacturers. The trade was, therefore, practically controlled from producer to consumer, and the potency of the scheme was established by the cooperation of 85 per cent of the manufacturers, and their fidelity to it was secured not only by trade advantages but by what was practically a pecuniary penalty, not inaptly termed in the agreement "cash bail." The royalty for each furnace was $5, 80 per cent of which was to be returned if the agreement was faithfully observed; it was to be "forfeited as a penalty" if the agreement was violated. And for faithful observance of their engagements the jobbers, too, were entitled to rebates from their purchases. It is testified that 90 per cent of the jobbers in number and more than 90 per cent in purchasing power joined the combination.

These agreements, the court held, clearly transcended what was necessary to protect the use of the patent or the monopoly which the law conferred upon it, and they accomplished a restraint of trade condemned by the Sherman law.

> "Rights conferred by patents," said the court, "are indeed very definite and extensive, but they do not give any more than other rights an universal license against positive prohibitions. The Sherman law is a limitation of rights, rights which may be pushed to evil consequences and therefore restrained."

The decision in the Tobacco case (221 U. S., 106, 181) was referred to as demonstrating the comprehensive and thorough character of the law and its sufficiency to prevent evasions of its policy—

> "by resort to any disguise or subterfuge of form" or the escape of its prohibitions "by any indirection." "Nor," it was added, "can they be evaded by good motives. The law is its own measure of right and wrong, of what it permits or forbids, and the judgment of the courts can not be set up against it in a supposed accommodation of its policy with the good intention of parties, and, it may be, of some good results."

DISSOLUTION DECREES.

Pursuant to the interlocutory decree rendered on June 21, 1911, in favor of the Government in a suit against the E. I. du Pont de Nemours Powder Co. et al., known as the Powder Trust, prolonged negotiations between the Government and the defendants ensued, resulting in the presentation to the circuit judges sitting in the District Court of the United States for Delaware, of a plan of dissolving the combination found by the court to exist, and of distributing its property and business in such manner as to remove the illegal condition found by the court to exist. After full consideration the court entered a decree on June 13, 1912, by the terms of which the dissolution of seven of the corporations defendant, and the distribu-

tion of their properties among their stockholders, respectively, was ordered. The remainder of the property and business of the combination was required to be distributed between the defendant, E. I. Pont de Nemours Powder Co. It was further provided that part of and two new corporations organized for the purpose; the properties directed to be transferred to such new corporations to be so transferred in consideration of the issue of stock and bonds in equal amounts, upon a valuation of the properties based on the last inventory thereof, including a fair valuation for brands and good will; such bonds to bear interest at 6 per cent per annum, payable only if earned, noncumulative, the principal being payable 10 years from date, subject to earlier redemption at 102 per cent; such stock and bonds to be distributed among the stockholders of the E. I. du du Pont de Nemours Powder Co. (1903 New Jersey corporation), said stock should be without voting power and that the 27 individual defendants found to have been engaged in the unlawful combination should receive one-half of their distributive shares in stock having, and the other one-half in stock not having, voting power. That so long as such nonvoting stock should be held by either of said 27 individual defendants or his wife, or children, it should be without voting power.

Other details were provided in the decree to effectuate such plan, and it was provided that in case defendants should not have carried said plan into operation on or before December 14, 1912, then an injunction should issue restraining the operation of the defendants in interstate commerce, with leave to apply to the court for further time to carry out the plan. The decree further ordered the cancellation of a number of agreements found to be in restraint of trade, and further contained specific injunction against enumerated practices and relations between the three distributee companies which would make possible the renewal of the illegal combination. Steps are now being taken by the defendants to carry out the provisions of this plan and decree.

In each of the suits brought in equity under the antitrust law against the Pacific Coast Plumbing Supply Association; the Aluminum Co. of America; Central West Publishing Co., Western Newspaper Union, American Press Association, et al., the defendants have voluntarily submitted to final decrees entered by the court commanding the dissolution of the unlawful combination and enjoining practices condemned by the petitions.

In the suit against the Pacific Coast Plumbing Supply Association, 24 corporations and 60 individuals were enjoined from combining, etc., to prevent manufacturers of plumbing supplies from selling to persons not members of the association or not listed in a so-called "bluebook" published by the association; from publish-

ing any such book; from publishing any list of manufacturers who had not agreed to sell only to members of the association or to persons listed in the bluebook; from advertising lists of persons in the business who are not members of the association; from combining to boycott a manufacturer for having sold to persons not members of the association and not listed in the bluebook; from conspiring to prevent persons located in a given territory from purchasing plumbing supplies from manufacturers or other dealers, and from communicating with a manufacturer or dealer to induce him not to sell to persons not members of the association or not conforming to the definition of a jobber given in the bluebook.

In the decree against the Aluminum Co. of America, certain contracts restricting the freedom of sale of the produce of defendants and other corporations in America and foreign markets were declared illegal, and their operation enjoined, and defendants were enjoined from entering into like agreements or into any combination—

> the purpose or effect of which is to restrict or control the output or the prices of aluminum or any material from which aluminum is directly or indirectly manufactured, and from making any contract or agreement for the purpose of or the effect of which would be to restrain commerce in bauxite, alumina, or aluminum, or to prevent any other person, firm, or corporation from or to hinder him or it in obtaining a supply of either bauxite, alumina, or aluminum of a good quality in the open market in free and fair and open competition, and from themselves entering into, or compelling or inducing, under any pretext, or in any manner whatsoever, the making of any contract between any persons, firms, or corporations engaged in any branch of the business of manufacturing aluminum goods, the purpose or effect of which would be to fix or regulate the prices of any of their raw or manufactured products in sale or resale of such commodity.

The decree against the Central West Publishing Co. and the Western Newspaper Union, et al., dealt with substantially the only two concerns in the country engaged in the manufacture and sale of ready-print newspaper matter and stereotype plates for use in newspapers. The defendants were enjoined against combining with each other and thus suppressing all existing competition in the business. They were further enjoined:

> 1. From underselling any competing service with the intent or purpose of injuring or destroying a competitor;
> 2. From sending out traveling men for the purpose or with instructions to influence the customers of the competitors, or either of them, so as to secure the trade of the customers, without regard to the price;

3. From selling their goods at less than a fair and reasonable price with the purpose or intent of injuring or destroying the business of a competitor;

4. From threatening any customer of a competitor with starting a competing plant unless he patronized the defendant.

5. From threatening the competitors of either one that they must either cease competing with the defendants or sell out to one of the defendants, under threat that unless they did so their business would be destroyed by the establishment of near-by plants to compete with them;

6. From in any manner, directly or indirectly, causing any person to purchase stock or become interested in the other for the purpose or effect of harassing it with unreasonable demands or inquiries;

7. From circulating reports injurious to the business of the other;

8. From persuading customers of competitors to violate contracts made with them by undertaking to indemnify them against loss and damage by reason of so doing.

Every one of these decrees dealt with certain forms of unfair competition which investigation had shown to have been resorted to for the purpose of controlling prices and suppressing competition. An examination of the different decrees will demonstrate that the decisions in the Standard Oil and Tobacco cases have been put into practical effect, and that such application has been made in conformity with the interpretation placed upon those decisions by the Supreme Court itself in the case of United States *v.* St. Louis Terminal Co., above referred to (224 U. S., 383–409). The Federal courts are exercising in equity suits under the Sherman law a power to restrain which is coextensive with the evils against which it was enacted, and it has been the effort of the department to bring before the court for the application of this rule all combinations in violation of law which have been brought to its notice.

An examination of these decrees will also show that the courts have found no difficulty in applying the terms of the law to meet and enjoin the continuance of any form of unfair competition which has resulted in imposing an undue restraint upon interstate commerce, or which makes for monopoly. They also serve to demonstrate that no amendment of the law in the direction of declaring the illegality of particular practices is necessary to clothe the courts with full power to prevent any and all acts which may be employed to accomplish the illegal purposes denounced by the statute. In the latest utterance by the Supreme Court on the subject in the case of Standard Sanitary Manufacturing Company *v.* The United States (decided November 18, 1912), the court refers to the decision in United States *v.* American Tobacco Company (221 U. S., 106) as having demonstrated "the comprehensive and thorough character of the law" and

"its sufficiency to prevent evasions of its policy 'by resort to any disguise or subterfuge of form' or the escape of its prohibitions 'by any indirection.'"

I am strongly of the opinion that the advocacy of amendments of the law which shall particularize different acts as constituting unlawful restraints of trade or attempts at monopoly, has its origin, not so much with those who desire the enforcement of the law, as with those who are anxious to secure a safe means of its evasion. An enumeration by statute of the different practices which, in and of themselves, without regard to the circumstances of particular cases, should be declared illegal, will either go too far or not far enough. Whether or not, for example, selling a commodity in one part of the country at a price lower than that charged in another part of the country should, or should not be enjoined, must depend entirely upon the nature of the case presented, the circumstances under which such sales are had, the effect upon competition produced thereby, and the extent and character of the control exercised by the vendor over the trade in which he is concerned. Experience in those States in which laws have been enacted particularizing as illegal practices employed in accomplishing a restraint on commerce does not tend to prove that they have strengthened the law or aided its enforcement.

CRIMINAL PROSECUTIONS UNDER THE SHERMAN LAW.

The experience of the last year in endeavoring to enforce criminal liability under the Sherman law has not been encouraging. In the case of Steers *v.* United States (192 Fed., 1) the circuit court of appeals in the sixth circuit affirmed the conviction of certain defendants in what were known as the "night rider" cases, for conspiracy to prevent the shipment of tobacco in interstate commerce by violence and intimidation. The acts of the defendants consisted in preventing by force and threats the shipment of leaf tobacco from Kentucky into other States.

The trial of the beef packers in Chicago, which was commenced December 6, 1911, resulted in a verdict of acquittal of all the defendants on March 27, 1912.

The trial at Detroit, Mich., of the indictment against the defendants who had united in what is known as the Bath Tub Trust resulted in a disagreement of the jury on March 14, 1912.

The trial, in New York City, of the defendants in United States *v.* Kissell, resulted in the disagreement of the jury on March 31, 1912.

The trial of the defendants Jay B. Pearce and others, for combination to prevent the sale of wall paper to a competitor, resulted in the acquittal of the defendants by the jury in the district court at Cleveland, Ohio, on May 24, 1912.

Four indictments were found in the District Court of Alaska against railway and wharf companies for conspiracy to monopolize transportation in that region; demurrers to two of the indictments were sustained, overruled as to the third, and sustained as to certain of the defendants in the fourth. The indictments which were held good will be brought to trial at the December term.

A demurrer was sustained by Judge Putnam in the district court in Boston, Mass., to one indictment found against the United Shoe Machinery Co. and its officers and to one count in a second indictment. Appeal has been taken by the Government in each case to the Supreme Court and the case advanced and set for hearing in January next.

A demurrer to an indictment against the National Cash Register Co. and its directors was overruled by Judge Hollister in the District Court for the Southern District of Ohio, and pleas of not guilty being interposed, trial was commenced on November 18, instant, and is now proceeding.

DISSOLUTION NATIONAL PACKING CO.

Following the termination of the trial of the indictment of Messrs. Swift, Armour, and the other packers in Chicago, steps were taken by the officers of the National Packing Co. to accomplish a voluntary dissolution of that concern. The National Packing Co. was organized to take over a large number of separate companies engaged in the meat-packing business. Its stock was owned by Messrs. Armour & Co., Swift & Co., and Morris & Co., in certain proportions, and the facilities afforded for meetings of the representatives of these companies as directors in the National Packing Co. were, it was charged in the indictment above mentioned, utilized to restrain trade and commerce between these three separate concerns. The properties held by the National Packing Co. have been distributed among its stockholders by actual conveyances, and in the distribution (details of which were submitted to this department) it appears that care has been taken to so distribute the plants (which are situated in a great many States and are said to be of a value aggregating some $60,000,000) as to secure competitive conditions in many places where no competition theretofore existed. Many of these properties were, although actually owned by the National Packing Co., operated in the names of corporations supposed to be independent. They are now conveyed into the names of their actual owners, and the business is being conducted by such owners in their own names. It is believed that this dissolution and distribution have accomplished a substantial restoration of competitive conditions in a very large industry which have not for a long time heretofore existed.

COTTON CORNER CASE.

The appeal from the judgment of the circuit court in New York sustaining the demurrer to the indictment in this case, which was argued in the Supreme Court in October, 1911, was reassigned by the court for reargument, and has been reargued and submitted at the present term.

ANTHRACITE-COAL COMBINE.

The appeal from the judgment in the suit against the Reading Co., and others, as constituting an illegal combination of the anthracite-coal producers and carriers in Pennsylvania, which was argued in the Supreme Court at the October term, 1911, still remains undecided.

SOUTHERN PACIFIC MERGER.

The appeal from the judgment of the circuit court in the eighth circuit in the suit against the Southern Pacific and Union Pacific Railroad Cos., to enjoin the continued control of the former by the latter, was argued in the Supreme Court in April, 1912, and still remains undecided.

LUMBER TRUST.

In the four equity suits against the defendants known generally as the Lumber Trust, the taking of testimony has proceeded and an effort is being made to bring the cases to trial at an early day.

SUGAR TRUST.

Demurrers interposed to the petition in equity filed in the district court in New York City against the American Sugar Refining Co. and others, were overruled, and the taking of testimony is being proceeded with.

TRANS-ATLANTIC STEAMSHIP POOL.

The demurrers to the petition filed January 4, 1911, against the Hamburg-American Packet Co., and other lines alleged to be engaged in a combination controlling steerage traffic on the Atlantic Ocean, were overruled by the four circuit judges sitting in the district court for the Southern District of New York on December 20, 1911. Two further suits have been brought against steamship lines charging them with combination to monopolize and illegally restrain commerce between the United States and foreign countries, viz.:

United States *v.* American-Asiatic Steamship Co. et al. Petition in equity filed March 30, 1912, in southern district of New York, charging defendants

as common carriers with combining and conspiring, entering into unlawful contracts and pooling agreements, and allowing rebates, for the purpose of, and which resulted in, their securing a monopoly of the business of transporting freight between ports on the Atlantic coast of the United States and ports in the Philippine Islands, Japan, China, and other countries in the Far East; and praying for specific and general relief.

United States *v.* Prince Line (Ltd.) et al. Petition in equity filed June 5, 1912, in the southern district of New York, charging defendants, as common carriers of freight and passengers between ports of the United States and ports in the Republic of Brazil, with acquiring and maintaining a substantial monopoly by means of conspiracies, combinations, contracts, rebates, and other unlawful acts, and praying for an annulment of said contracts, agreements, etc., and praying for specific and general relief.

STEEL CORPORATION.

Issue has been joined in the suit in equity against the United States Steel Corporation, and others, for violation of sections 1 and 2 of the Sherman Antitrust Act, and the taking of testimony is proceeding.

TOWING MONOPOLY.

The suit against the Great Lakes Towing Co. and others, alleged to be engaged in monopolizing the towing facilities in the Great Lakes, has been argued and submitted to the circuit judges sitting in the district court for the Northern District of Ohio, and decision is awaited.

COAL ROADS COMBINATION.

The suit in equity brought at Columbus, Ohio, against the Lake Shore & Michigan Southern Railway Co. and other railroads, by reason of agreements and arangements alleged to constitute a combination and conspiracy in restraint of commerce in mining and transportation of coal, has been argued and submitted to the circuit judges sitting in the district court, and decision is awaited.

HARVESTER TRUST.

After several months of fruitless negotiation with the attorneys for the International Harvester Co. over propositions made by them looking toward a voluntary division of the properties and business of that defendant, a petition in equity was filed against it on April 30, 1912, in the United States District Court for Minnesota, charging it with attempting to monopolize harvesting and agricultural machinery and implements, and twine, by means of combinations, conspiracies, and unlawful practices. Issue has been joined, and the taking of testimony is going forward.

NEW PROCEEDINGS.

Petitions in equity have been filed in the following cases, which are now pending:

United States *v.* National Cash Register Co. et al. Petition in equity filed December 4, 1911, in United States Circuit Court, Southern District of Ohio, alleging conspiracy and numerous other unlawful acts, resulting in monopoly in the manufacture, sale, and shipment in interstate and foreign commerce of cash registers and other registering devices, and praying for perpetual restraining order giving general relief.

United States *v.* United Shoe Machinery Co. et al. Petition in equity filed December 12, 1911, in United States Circuit Court, District of Massachusetts, alleging combinations, conspiracies, and other unlawful acts in restraint of interstate and foreign trade in shoe machinery, and praying for perpetual restraining order, dissolution of company, and restoration of normal conditions.

United States *v.* The Keystone Watch Case Company et al. Petition in equity filed December 20, 1911, in the United States Circuit Court, Eastern District of Pennsylvania, alleging unlawful contracts, combinations, and conspiracies with a view to monopolizing, and which have resulted in a substantial monopoly of interstate trade and commerce in filled watch cases and the Howard watch, and praying for a permanent decree ordering the dissolution of the company and enjoining defendants from further committing the unlawful acts complained of. Issues joined and testimony now being taken.

United States *v.* American Naval Stores Co. et al. Petition in equity filed January 8, 1912, in the United States District Court, Southern District of Georgia, alleging unlawful combination and conspiracy resulting in the restraint of interstate and foreign commerce in spirits of turpentine and resin, manipulation of prices on the board of trade, and other unfair business methods tending to render the business a precarious and hazardous one for competitors, and praying for specific and general relief by perpetual injunction. Pending on demurrer.

United States *v.* Associated Billposters and Distributors of the United States and Canada et al. Petition in equity filed August 3, 1912, in the United States District Court, Northern District of Illinois, charging defendants with engaging in a combination and conspiracy to place unlawful restraints upon interstate and foreign trade and commerce in posters, and seeking to prevent further action under the unlawful contracts and agreements adopted by said defendants in pursuance thereof.

United States *v.* Motion Picture Patents Co. et al. Petition in equity filed August 15, 1912, in the United States District Court, Eastern District of Pennsylvania, to remove the restraints which defendants have imposed upon interstate and foreign trade and commerce in machines, appliances, and apparatus relating to the motion-picture art, and upon persons engaged in such trade and commerce.

COFFEE VALORIZATION.

A petition was filed May 18, 1912, in the United States District Court, Southern District of New York, against Hermann Sielcken and others, to prevent an undue restraint upon interstate and foreign commerce in coffee, growing out of the operations of what is known as a *valorization* plan, effectuated by means of certain con-

tracts between the State of Sao Paulo, in Brazil, and a syndicate of bankers and others, whereby the disposition of a very large amount of coffee was placed in the hands of a committee, and competition in the importation into and sale of such coffee in the United States was controlled by such committee, whose operations resulted in doubling the retail price of coffee in the American markets. A motion was made for a temporary injunction to restrain the sending out of the country of 920,000 bags of coffee held under the valorization plan, stored in the city of New York. The motion was denied. Demurrer to the petition has been filed by defendant Sielcken, the only defendant other than the warehouse company with which the coffee was stored, upon whom service of process has so far been made. The suit is now pending.

The operations of this syndicate have resulted in more than doubling the retail price of coffee to the American consumer, and thus have laid a heavy tax upon them. In considering the relief which could be afforded, the attention of the department was drawn to a curious defect in the law which should be applicable to the case. The provisions of the Wilson tariff law still in force (act of Aug. 27, 1894, chap. 349; 28 Stats., 570) declare, in section 73, that every combination, etc., shall be illegal and void when made by or between two or more persons or corporations either of whom is engaged in importing an article from a foreign country into the United States, and when the combination is intended to operate in restraint of lawful trade or free competition, or to increase the market price in any part of the United States of the article so intended to be imported, etc. The subject dealt with in the section is combinations, etc., respecting the importation of merchandise into the United States from abroad; and it is declared to be unlawful for any two or more persons, one of whom is engaged in importing it, to combine or enter into contracts for the purpose of operating in restraint of lawful trade or free competition, or increasing the price of such merchandise. When it comes to remedies, however, section 76 provides that any property owned under any such contract, etc., or the subject of such combination "*and being in the course of transportation from one State to another or to or from a Territory or the District of Columbia*, shall be forfeited to the United States, and may be seized," etc.; but it does not give the like right of seizure when the property *is in course of being imported into the United States*, or if it *has been* imported into, and is held in one of the States of the United States for the purpose of being employed in effectuating such an unlawful combination. In the particular case under consideration, therefore, neither the coffee in process of importation into the United States, nor that which was stored in the city of New York and held subject to the operations of the unlawful combination, was subject to seizure

under this section, although had a part of it been shipped from New York to Jersey City to be stored and held in like manner subject to the control of the combination, it could have been seized in transit and forfeited to the United States. At the instance of this department a bill to amend the law by correcting this omission was introduced into and passed by the House of Representatives, and is now pending in the Senate. I most respectfully urge its passage at an early day.

Criminal indictments have been found as follows:

United States *v.* Joe Cotton, Smith Cotton, Walter Barlow, et al. During the progress of a strike on the Illinois Central Railroad an order was obtained restraining strikers from committing acts of violence against the company or its employees, etc. Defendants were, on November 15, 1911, indicted in the southern district of Mississippi for conspiring to restrain interstate commerce, some of the alleged overt acts being the firing of several hundred shots through a train carrying strike breakers.

United States *v.* A. Haines et al. Two indictments returned December 16, 1911, in the southern district of Florida, against Haines and others, for combining, conspiring, and agreeing, under the name of the Longshoremen's Association, Local No. 625, to unlawfully impose fines upon the Mason Forwarding Co. for declining to recognize one of the conspirators known as the walking delegate, and endeavoring to enforce payment of said fines by inducing workmen to discontinue loading cargoes of lumber intended for interstate shipment.

United States *v.* A. Haines et al. Two indictments returned December 16, 1911, in the southern district of Florida, against Haines and others, for combining, conspiring, and agreeing, under the name of the Longshoremen's Association, Local No. 625, upon rules, regulations, requirements, etc., and a certain course of conduct tending to interfere with interstate commerce, which must be observed by all contractors employing workmen to load vessels with lumber for interstate shipment in order to avoid interference by said conspirators.

The four indictments last mentioned were consolidated, the defendants plead guilty and were sentenced to four hours' detention in the custody of the United States marshal.

United States *v.* New Departure Manufacturing Co. et al. Indictment returned January 8, 1912, in the western district of New York, against 6 corporations and 18 individual defendants, charging unlawful combination and conspiracy for the purpose of monopolizing the entire coaster-brake business, and fixing and maintaining prices for coaster brakes. Plea in abatement overruled April 2, 1912.

United States *v.* Calvin N. Payne et al. Indictment returned August 29, 1912, in the northern district of Texas charging defendants with unlawfully and knowingly engaging in a conspiracy in restraint of interstate and foreign trade and commerce in oils and oil products.

United States *v.* Consolidated Rendering Co. Indictment returned October 31, 1912, in the district of Massachusetts, charging monopoly of interstate trade and commerce in rendering materials.

United States *v.* Consolidated Rendering Company et al. Indictment returned October 31, 1912, in the district of Massachusetts, charging monopoly of interstate trade and commerce in rendering materials.

The last two indictments mentioned were brought to meet defects found by the court on demurrer to exist in indictments previously found.

TAKING TESTIMONY IN ANTITRUST SUITS.

In the equity suit brought against the United Shoe Machinery Co. and others, issue being joined by answers of the defendants, the Government was about proceeding to the taking of testimony before an examiner under the equity rules, when the defendants demanded that the public be excluded from the hearings before the examiner. The Government contended that the public could not properly be so excluded. The defendants thereupon made application to the court for an order in the premises. A certificate having been filed under the terms of the expedition act (32 Stat., 823; as amended, 36 Stats., 854), the matter was heard before Circuit Judges Colt and Putnam and District Judge Brown, of Rhode Island, and an opinion was rendered to the effect that under the terms of United States equity rule 67, providing for the taking of testimony in equity cases before examiners, which examination, it is provided, "shall take place in the presence of the parties or their agents, by their counsel or solicitors * * *," no person other than those mentioned was entitled to be present, and, therefore, that the public should be excluded from the hearings. This direction is not appealable to the Supreme Court. No order has been entered upon the decision, and no further proceeding has been taken in the cause, for the reason that I believe it to be inconsistent with the public interest to proceed with the taking of testimony under the conditions imposed by the court, if relief therefrom can be procured from Congress.

The decision, it appears to me, is based upon a manifest misconception of the nature of the proceedings and the character of the parties. When the Government of the United States is a party to a suit, and particularly to a suit brought under the Sherman antitrust law to prevent unlawful restraints upon interstate commerce or foreign commerce—essentially a matter affecting the public—all the people have a legitimate interest in the proceeding, and are entitled to know just what evidence is being given, and when it is given. The public are the real parties to the suit; and within the text of the rule they are entitled to be present. In the prosecution of defendants charged with monopolizing or attempting to monopolize commerce, it is the experience of the department that the newspaper reports of evidence given in the examination of witnesses often lead to persons having knowledge of the facts furnishing the Government with valuable evidence bearing upon the questions in dispute which otherwise would not be discovered. Even if the court in this case has placed a correct construction upon the law, in my judgment Congress should by statute alter the rule. So far as I have been able to ascertain, this decision is the first one ever rendered in this country which excludes the public from hearing the evidence given in a civil suit to which the Government is a party. The revised equity rules

promulgated by the Supreme Court, which take effect February 1 next, repeal rule 67 and provide for taking testimony in equity suits in open court, subject, however, to the right of both parties to take testimony under the provisions of the Revised Statutes, sections 876, 871, and 872. The court is also empowered for good and exceptional cause to depart from the general rule by allowing the deposition of witnesses to be taken before an examiner upon terms specified in the order. But no provision is included in said rules bearing upon the publicity to be allowed on such hearings.

Suits brought in equity under the Sherman antitrust law for the dissolution of unlawful combinations, involve such comprehensive inquiries, the taking of the testimony of so many witnesses; the examination of such manifold and voluminous books, accounts, documents, etc., and they so necessarily require the Government to call hostile and antagonistic witnesses, that it may be doubted whether in many instances they can properly be tried in open court; that is, whether the testimony must not necessarily in almost all cases be taken out of the court, and the case submitted to the court upon testimony so taken. This is especially so in view of the provisions of the expedition act, which require such cases to be heard by not less than three judges. To meet this situation, I suggest that provision be made by way of amendment to the Expedition Act to the effect that where the Attorney General shall file the certificate therein provided for, and shall also certify that, in his opinion, the case is one in which the testimony can not properly be taken under the ordinary provisions of the equity rules, the court shall on his application appoint a special master with power to take the testimony, in the presence of the counsel for the respective parties, and such other persons as may choose to attend, and with power to rule on the admission of evidence, and report the facts together with his opinion thereon and the evidence so taken to the court, upon the coming in of which report either party may file exceptions thereto, which shall be heard before not less than three judges who shall determine the case.

MATTERS ARISING UNDER THE INTERSTATE COMMERCE LAWS.

COMMODITY CLAUSE CASES.

Following the decision in the case of United States *v.* Lehigh Valley Railroad Company, referred to in my last annual report (220 U. S. 257), remanding the case to the circuit court with instructions to allow the Government to amend its complaint in order to show that the Lehigh Valley Coal Co. was in fact a mere adjunct, instrumentality, or department of the railroad company, and, therefore, that ownership of the coal by the coal company at the time of transportation, amounted in reality to ownership by the railroad company, and

was transported in violation of the commodities clause of the commerce act (34 Stat., 584), the railroad company filed an answer to the amended complaint putting its allegations in issue. Subsequently, however, the railroad company caused to be incorporated under the laws of New Jersey a separate company known as the Lehigh Valley Coal Sales Co., with an authorized capital stock of $10,000,000, of which $6,060,800 was issued forthwith. The Lehigh Valley Railroad Co. declared a dividend in January, 1912, of 10 per cent on its outstanding capital stock, this dividend amounting in the aggregate to $6,060,800. The preferred and common stock holders of the railroad company were given the privilege of subscribing to shares of the sales company to an amount equivalent to 10 per cent of their holdings. By this method, in effect, the shares of the sales company were distributed to and among the shareholders of the railroad company. Thereupon, on March 1, 1912, the Lehigh Valley Coal Co. entered into a contract with the Lehigh Valley Coal Sales Co. whereby the former agreed to sell to the latter all coal hereafter mined by it from all coal lands owned or leased by it, together with all coal it may purchase, the sales companying agreeing to purchase and take all such coal at a price delivered f. o. b. railroad cars, at the breakers where the same is prepared, at, for all sizes above pea coal, a sum equal to 65 per cent of the general average f. o. b. price of said sizes received at the water points at or near New York, between Perth Amboy and Edgewater.

The situation is, therefore, that coal which is shipped over the Lehigh Valley Railroad is mined by the Lehigh Valley Coal Co., all of whose stock is owned by the railroad company, and is sold at the breakers to the Lehigh Valley Coal Sales Co., all of whose stock has been originally issued to and distributed among the stockholders of the railroad company pro rata, but which company has separate officers from the railroad company, and separate directors, and whose stock may be sold by the stockholders without regard to their continued holding of stock in the railroad company. By this arrangement both the railroad company and the coal companies seem to have parted in good faith with title to the coal before transportation begins and it is claimed therefore that transportation is free from the prohibition of the commodities clause as construed by the Supreme Court in 213 U. S., 412. The question will be submitted to the court at an early day.

Several cases of importance in the construction of the interstate commerce acts were decided by the Supreme Court at the October term, 1911.

The Second Employers' Liability cases (223 U. S., 1), upheld the constitutionality of the employers' liability act of April 22, 1908 (35 Stats., 65), as amended April 5, 1910 (36 Stats., 291), regulating the liability of common carriers by railroad to their employees

while both are engaged in such commerce. A former act on the same subject was declared unconstitutional by the Supreme Court, because it declared the liability of an intrastate employer as well as the one engaged in interstate commerce. (Employers' Liability cases, 207 U. S., 463.) The acts of 1908 and 1910 above mentioned were passed to avoid the criticism which was held to invalidate the former act. On the application of this department, leave was given to file briefs in the Supreme Court in support of the constitutionality of the law, and the decision of the court upheld the position taken by the department.

In Southern Railway Company *v.* United States (222 U. S., 20) the Supreme Court held that the automatic car coupler provision of the safety-appliance act of March 2, 1893 (27 Stats., 531, as amended Mar. 2, 1903, 32 Stats., 943), applies to all locomotives, cars, and similar vehicles used on any railroad which is a highway of interstate commerce, whether employed in moving intrastate or interstate traffic.

In Interstate Commerce Commission *v.* Goodrich Transit Company (224 U. S., 194) it was held that the commission, under the authority of section 20 of the act to regulate commerce, as amended by the Hepburn Act, June 29, 1906 (34 Stats., 584), could require corporations organized under State laws and engaged in the carriage of passengers and freight by water upon the Great Lakes, to conform to prescribed methods of keeping accounts and books as to operating expenses and revenues, and to report respecting their corporate organization and financial condition, etc., not merely with respect to that part of their business which is strictly interstate, or relating to commerce between the United States and foreign countries, but as to *all* of their business. The court said that bookkeeping is not interstate commerce—

> but bookkeeping may and ought to show how a business which in part at least is interstate commerce is carried on, in order that the commission charged with the duty of making reasonable rates and prohibiting unfair and unreasonable ones may know the nature and extent of the business of the corporation, the cost of its interstate transactions, and otherwise to inform itself so as to enable it to properly regulate the matters which are within its authority.

In the case of Interstate Commerce Commission *v.* United States, ex rel. Humboldt Steamship Company (224 U. S., 474), it was held that Alaska is a Territory within the meaning of section 1 of the interstate commerce act as amended, and that mandamus was properly issued by the Supreme Court of the District of Columbia, upon the petition of the relator, to compel the Interstate Commerce Commission to take jurisdiction and render its decision on an application to require certain railroad companies owning and operating lines of railroad in Alaska to file with the commission a schedule of rates and

charges, and to establish through routes and through rates in conjunction with the relator.

In Interstate Commerce Commission et al. *v.* Baltimore & Ohio Railroad Company et al. (225 U. S., 326) an order of the commission forbidding the appellees to charge a different rate for the transportation of coal intended for the use of the railroad itself as fuel, than for the transportation of commercial coal to the same point of delivery was sustained, upon the ground that to charge a different rate would constitute an unlawful discrimination under the act to regulate commerce.

In the case of Procter & Gamble Co. *v.* United States et al. (225 U. S., 282) it was held that the Commerce Court was without jurisdiction to review an order of the Interstate Commerce Commission refusing to grant relief against a common carrier by railroad. The suit arose over the alleged illegality of certain demurrage regulations. Upon denial of relief by the Interstate Commerce Commission and the dismissal of appellant's petition asking that the commission direct the railroad companies concerned to discontinue the practice of exacting demurrage charges, suit was brought in the Commerce Court to set aside the commission's order; appellant also asked judgment against the railroads for the amount of the demurrage alleged to have been illegally exacted, and to enjoin the collection of further demurrage. The Commerce Court assumed jurisdiction of the case and decided that the commission had rightfully refused to grant the relief. On appeal to the Supreme Court it was *there* held that the Commerce Court had erred in taking jurisdiction of the case; that the act creating the court, in so far as it related to the bringing of suits to enjoin, set aside, or annul orders of the commission, conferred on the court no greater jurisdiction and power than those possessed by the circuit courts of the United States at the time of the passage of the act, namely, jurisdiction to entertain complaints as to *affirmative* orders of the commission only, with authority to reexamine the findings of the commission for the purpose only of ascertaining whether its action was repugnant to the Constitution, in excess of the statutory power conferred upon it, or manifestly such an abuse as to be equivalent to an excess of authority. To construe the act otherwise, the Supreme Court declared, would frustrate the legislative policy which led to the adoption of the act and would multiply the evils which it was designed to prevent.

SAFETY-APPLIANCE ACT.

During the fiscal year ending June 30, 1912, 177 cases, involving 499 counts, were transmitted to the United States attorneys for prosecution under the above statute. This is an increase of 7 cases and

89 counts over the preceding year. During the year penalties to the extent of $40,400 were assessed, an increase of $5,200 over the preceding year.

HOURS-OF-SERVICE ACT.

Two hundred and seventeen cases, involving 2,135 counts, were transmitted to the United States attorneys during the year, and penalties aggregating $25,835 were imposed. This shows an increase over the preceding year of 972 counts.

ASH-PAN ACT.

Under this statute 5 cases, involving 6 counts, were reported for prosecution, and penalties aggregating $1,600 were assessed. This shows a decrease of 17 counts over the year 1911.

TWENTY-EIGHT-HOUR LAW.

The Department of Agriculture reported during the year 631 instances of apparent violations of the 28-hour law, which were transmitted to the United States attorneys for prosecution. This is an increase of 33 cases over the number reported in 1911. The satisfactory recovery of penalties has continued throughout the year.

The fact that more cases were reported this year than during the preceding should not be taken to mean that there is a growing disregard for this statute, as a large number of the cases reported represented violations occurring during the years 1910 and 1911. On the contrary, several roads have indicated their intention to conform to the requirements of the statute, and to that end have greatly enlarged their stock-yard facilities. It is believed that another year will see a large reduction of the number of violations reported and the interstate transportation of live stock throughout the United States in a humane manner and in accordance with law.

REBATES AND UNLAWFUL DISCRIMINATIONS.

Sixty-three prosecutions for illegal discriminations and rebates under the Hepburn Act and the Elkins Act have been instituted during the year. These cases, together with prosecutions for violations of the safety-appliance and hours-of-service acts, have been dealt with in conference with attorneys for the Interstate Commerce Commission, as such proceedings are usually initiated by that body although under the control and supervision of this department. The following is a summary statement of such prosecutions:

INDICTMENTS RETURNED.

1. United States *v.* American Express Company (district court, western New York). April 12, 1912, indictment returned for collecting more than published rates. (10 counts.)

2. United States *v.* Adams Express Company (district court, western New York). April 12, 1912, indictment returned for granting allowances to cover drayage performed by the shipper. (5 counts.)

3. United States *v.* Adams Express Company (district court, southern Ohio). February 22, 1912, indictment returned for collecting more than the published rate. (11 counts.)

4. United States *v.* Maurice Ascher (district court, southern New York). January 22, 1912, indictment returned for false billing. (5 counts.)

5. United States *v.* Ball & Gunning Milling Company (district court, western Missouri). June 13, 1912, indictment returned for accepting concessions on shipments of corn meal and corn chops. (3 counts.)

6. United States *v.* Ball & Gunning Milling Company (district court, western Missouri). June 13, 1912, indictment returned for false billing. (5 counts.)

7. United States *v.* Jules E. Bernard (district court, southern New York). January 22, 1912, indictment returned for false billing. (3 counts.)

8. United States *v.* August Bontoux (district court, southern New York). January 22, 1912, indictment returned for false billing. (3 counts.)

9. United States *v.* H. E. Boruff (district court, Nebr.). July 9, 1912, indictment returned for unlawful use of interstate pass.

10. United States *v.* Castrucci Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing. (5 counts.)

11. United States *v.* Chapin & Company (district court, Indiana). May 18, 1912, indictment returned for accepting concessions.

12. United States *v.* Chicago, Kalamazoo & Saginaw Railway Company (district court, western Michigan). March 9, 1912, indictment returned for falsification of records.

13. United States *v.* Clyde Steamship Company (district court, southern Florida). December 12, 1911, indictment returned for absorbing drayage charges out of interstate rail-and-water rates.

14. United States *v.* A. L. Dennis Salt & Lumber Co. (district court, western Michigan). March 9, 1912, indictment returned for false billing shipments of lumber in connection with transit.

15. United States *v.* A. L. Dennis Salt & Lumber Co. (district court, western Michigan). March 9, 1912, indictment returned for accepting rebates.

16. United States *v.* Dennis Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for false billing shipments of lumber in connection with transit.

17. United States *v.* Dennis Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for false billing shipments of lumber in connection with transit.

18. United States *v.* Delaware & Hudson Company (district court, northern New York). February 21, 1912, indictment returned for violation of commodities clause—for transporting hay to be used in feeding mules at mines of the Delaware & Hudson Co. (25 counts).

19. United States *v.* Delaware & Hudson Company (district court, northern New York). February 21, 1912, indictment returned for falsification of billing for the purpose of defeating rate of connecting carriers (5 counts).

20. United States *v.* William L. Devine (district court, southern New York). May 2, 1912, indictment returned for giving rebates on import shipments to Wakem & McLaughlin, forwarding agents, under the guise of commissions.

21. United States *v.* Bert Easley Milling Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing shipments of flour (8 counts).

22. United States *v.* Flegle Brothers (district court, western Kentucky). March 13, 1912, indictment returned for false billing shipments of flour (11 counts).

23. United States *v.* Wm. Glenny Glass Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing shipments of glass articles (4 counts).

24. United States *v.* Grand Rapids & Indiana Railway Company (district court, western Michigan). March 9, 1912, indictment returned for accepting false billing in connection with transit shipments of lumber.

25. United States *v.* Grand Rapids & Indiana Railway Company (district court, western Michigan). March 9, 1912, indictment returned for granting rebates in connection with transit shipments of lumber.

26. United States *v.* M. Grider (district court, Arizona). December 21, 1911, indictment returned for misbilling.

27. United States *v.* Huntingdon & Broad Top Mountain Railroad & Coal Company (district court, middle Pennsylvania). June 12, 1912, indictment returned for suffering and permitting false entries to be made in railroad records. (13 counts.)

28. United States *v.* Huntingdon & Broad Top Mountain Railroad & Coal Company (district court, middle Pennsylvania). June 12, 1912, indictment returned for violation of commodities clause. (10 counts.)

29. United States *v.* Huntingdon & Broad Top Mountain Railroad & Coal Company (district court, middle Pennsylvania). June 12, 1912, indictment returned for failure to observe demurrage tariff. (3 counts.)

30. United States *v.* George Johnson (district court, southern Ohio). October 3, 1912, indictment returned for unlawful use of interstate pass.

31. United States *v.* Oscar F. Kosche (district court, southern New York). January 22, 1912, indictment returned for false billing.

32. United States *v.* Lake Shore & Michigan Southern Railway Company, R. K. Hynicka, and the Columbia Amusement Company (district court, northern Illinois). February 21, 1912, indictment returned for conspiracy to refund a portion of the transportation charges paid by various burlesque companies, under the guise of excessive rates for advertising in certain theatrical programs in various cities. (5 counts.)

33. United States *v.* The Mariconi Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing. (3 counts.)

34. United States *v.* Michigan Central Railroad Company (district court, Indiana). May 18, 1912, indictment returned for granting concessions in connection with transit on shipments of mixed feed. (10 counts.)

35. United States *v.* Michigan Central Railroad Company (district court, Indiana). May 18, 1912, indictment returned for accepting false billing in connection with transit shipments of lumber.

36. United States *v.* Nichols & Cox Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for accepting rebates in connection with transit shipments of lumber.

37. United States *v.* Nichols & Cox Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for false billing in connection with transit shipments of lumber.

38. United States *v.* Minneapolis, St. Paul & Saulte Ste. Marie Railway Company and T. E. Sands, General Freight Agent (district court, Minnesota). October 4, 1912, indictment returned for granting concessions in connection with transit shipments of flour.

39. United States *v.* Pittsburgh Plate Glass Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing. (6 counts.)

40. United States *v.* Phoenix Carriage Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing.

41. United States *v.* Harry J. Rhein, James E. Fennessy, The Henck Opera House Company, The Empire Circuit, and The Big Four Railroad Company (district court, northern Illinois). February 21, 1912, indictment returned for conspiracy to refund portion of the legal transportation charges paid by various burlesque companies for transportation over the New York Central lines, the refunds being paid under the guise of compensation for advertisements in certain theatrical programs. (5 counts.)

42. United States *v.* Harry J. Rhein, R. K. Hynicka, The Columbia Amusement Company, and The Big Four Railroad Company (district court, northern Illinois). February 21, 1912, indictment returned for conspiracy to refund portion of the transportation charges paid by various burlesque companies for transportation over the New York Central lines, the refunds being paid under the guise of compensation for advertising carried in certain theatrical programs. (5 counts.)

43. United States *v.* Russell-Miller Milling Company (district court, Minnesota). October 4, 1912, indictment returned for obtaining transportation at less than legal rate in connection with transit shipments of flour.

44. United States *v.* St. Louis & San Francisco Railroad Company (district court, eastern Missouri). October 10, 1912, indictment returned for charging more than legal rate. (11 counts.)

45. United States *v.* St. Louis & San Francisco Railroad Company (district court, eastern Missouri). June 13, 1912, indictment returned for granting concessions in connection with transit shipments of grain products.

46. United States *v.* St. Louis & San Francisco Railroad Company (district court, western Missouri). June 13, 1912, indictment returned for granting concessions. (4 counts.)

47. United States *v.* Solomon-Wickersham Company (district court, Arizona). December 21, 1911, indictment returned for false billing.

48. United States *v.* Chas. F. Solomon (district court, Arizona). December 21, 1911, indictment returned for false billing.

49. United States *v.* J. White Sprong (district court, northern New York). February 21, 1912, indictment returned for falsification of records of the Delaware & Hudson Co.

50. United States *v.* Standard Carbonic Company (district court, southern Ohio). February 22, 1912, indictment returned for false billing. (5 counts.)

51. United States *v.* Southern Railway Company (district court, southern Alabama). December 4, 1911, indictment returned for transporting lumber from points in Alabama to Mobile for export at less than legal rates. (17 counts.)

52. United States *v.* Sterling Salt Company, James W. Brice and Wm. S. Doolittle (district court, western New York). January 8, 1912, indictment returned for false billing. (5 counts.)

53. United States *v.* Texas & Pacific Railway Company (district court, eastern Louisiana). March 29, 1912, indictment returned for granting concessions to the American Chicle Co.

54. United States *v.* W. H. Underwood, R. K. Hynicka, Columbia Amusement Company, and Michigan Central Railroad Company (district court, northern Illinois). February 21, 1912, indictment returned for conspiracy to refund a portion of the transportation charges paid by various burlesque companies, under the guise of compensation for advertisements carried in certain theatrical programs. (5 counts.)

55. United States *v.* Valley City Lumber Company, Ltd. (district court, western Michigan). March 9, 1912, indictment returned for accepting rebates in connection with transit shipments of lumber.

56. United States *v.* Valley City Lumber Company, Ltd. (district court, western Michigan). March 9, 1912, indictment returned for false billing in connection with transit shipments of lumber.

57. United States *v.* Van Kenlen & Winchester Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for accepting rebates in connection with transit shipments of lumber. (2 counts.)

58. United States *v.* Van Kenlen & Winchester Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for false billing in connection with transit shipments of lumber.

59. United States *v.* J. W. Warner and H. P. Newton, trading as Warner, Newton Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for accepting rebates in connection with transit shipments.

60. United States *v.* J. W. Warner and H. P. Newton, trading as Warner, Newton Lumber Company (district court, western Michigan). March 9, 1912, indictment returned for false billing in connection with transit shipments.

61. United States *v.* D. W. Wickersham (district court, Arizona). December 21, 1911, indictment returned for false billing.

62. United States *v.* D. W. Wickersham, Chas F. Solomon, M. Grider, and Chas. Wardell (district court, Arizona). December 21, 1911, indictment returned for conspiracy to violate section 10 of the act to regulate commerce.

63. United States *v.* Harold R. Wakem (district court, southern New York). May 2, 1912, indictment returned for accepting from the Chesapeake & Ohio Railway rebates paid under the guise of commissions on import traffic.

CASES CONCLUDED.

1. United States *v.* American Chicle Company, southern district of Louisiana. November 25, 1911, indictment for false billing. January 27, 1912, plea of guilty; fine of $1,000 imposed.

2. United States *v.* Maurice Ascher, southern district of New York. January 22, 1912, indictment for false billing. February 21, 1912, plea of guilty; fine of $500 imposed.

3. United States *v.* Jules E. Bernard, southern district of New York. January 22, 1912, indictment for false billing. February 20, 1912, plea of guilty; fine of $1,050 imposed.

4. United States *v.* August Bontoux, southern district of New York. January 22, 1912, indictment for false billing. February 21, plea of guilty; fine of $100 imposed.

5. Unitd States *v.* Bessemer & Lake Erie Railroad Company, northern district of Ohio. April 26, 1911, indictment for granting rebates on shipments of ore. March 23, 1912, plea of guilty; fine of $20,000 imposed.

6. United States *v.* Bessemer & Lake Erie Railroad Company and Pittsburgh & Conneaut Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat legal rates on shipments of ore. March 23, 1912, plea of nolo contendere; fine of $10,000 imposed against each.

7. United States *v.* Castrucci Company, southern district of Ohio. February 22, 1912, indictment for false billing. March 9, 1912, plea of guilty; fine of $25 imposed.

8. United States *v.* Clyde Steamship Company, southern district of Florida. December 12, 1911, indictment for absorbing drayage or terminal charges out of interstate rail-and-water rates. March 14, 1912, plea of guilty; fine of $2,000 imposed.

9. United States *v.* Cassell & Elliott, southern district of West Virginia. November 21, 1911, indictment for accepting free transportation of merchandise via the Norfolk & Western Railway. April 5, 1912, plea of guilty; fine of $4,000 imposed.

10. United States *v.* Chicago, Kalamazoo & Saginaw Railway Company, western district of Michigan. March 9, 1912, indictment for falsification of records—falsifying billing covering shipments delivered to trunk lines for the purpose of increasing its division of through rates. May 16, 1912, plea of guilty; fine of $1,000 imposed.

11. United States *v.* Delaware, Lackawanna & Western Railroad Company, western district of New York. November, 1911, indictment for violating the commodities clause. March 18, 1912, verdict of guilty; fine of $2,000 imposed.

12. United States *v.* William L. Devine, southern district of New York. May 2, 1912, indictment for granting rebates to forwarding agents under the guise of commissions for soliciting import traffic. October 4, 1912, plea of guilty; fine of $15,000 imposed.

13. United States *v.* Burt Easley Milling Company, southern district of Ohio. February 22, 1912, indictment for false billing. March 18, 1912, plea of guilty; fine of $100 imposed.

14. United States *v.* William Glenny Glass Company, southern district of Ohio. February 22, 1912, indictment for false billing. October 1, 1912, nollepros entered.

15. United States *v.* Grand Rapids & Indiana Railway Company, western district of Michigan. March 9, 1912, indictment for granting rebates in connection with transit on shipments of lumber. May 18, 1912, verdict of guilty; fine of $14,000 imposed.

16. United States *v.* Grand Rapids & Indiana Railway Company, western district of Michigan. March 9, 1912, indictment for accepting false billing in connection with transit shipments of lumber. May 18, 1912, nolle-pros entered.

17. United States *v.* M. Grider, district of Arizona. December 21, 1911, indictment for false billing. May 1, 1912, nolle-pros entered.

18. United States *v.* Hocking Valley Railway Company, northern district of Ohio. November 2, 1911, indictment for discrimination and for concessions from legal rates by the acceptance of promissory notes instead of money. June 11, 1912, plea of nolo contendere; fine of $42,000 imposed.

19. United States *v.* Geo. F. Johnson, southern district of Ohio. October 3, 1912, indictment for unlawful use of interstate pass. October 7, 1912, plea of guilty; fine of $200 imposed.

20. United States *v.* Herman Kort, northern district of Alabama. April 27, 1911, indictment for false billing. May 8, 1912, verdict of guilty; fine of $300 imposed.

21. United States *v.* Oscar F. Kosche, southern district of New York. January 22, 1912, indictment for false billing. February 21, 1912, plea of guilty; fine of $600 imposed.

22. United States *v.* Lake Shore & Michigan Southern Railway Company, R. K. Hynicka, and the Columbia Amusement Company, northern district of Illinois. February 21, 1912, indictment for conspiracy to refund portion of the transportation charges under the guise of payments for advertising in theatrical programs. May 7, 1912, plea of guilty on behalf of Lake Shore; fine of $10,000 imposed. Case pending against other defendants.

23. United States *v.* Lake Shore & Michigan Southern Railway Company, northern district of Ohio. April 26, 1911, indictment for granting rebates on shipments of ore. March 23, 1912, plea of guilty; fine of $15,000 imposed.

24. United States *v.* Lake Shore & Michigan Southern Railway Company and Ashtabula Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat published rates on ore. March 23, 1912, plea of nolo contendere; fine of $6,000 imposed against Dock Company and fine of $1,000 against Lake Shore.

25. United States *v.* Lake Shore & Michigan Southern Railway Company and Pittsburgh & Conneaut Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat published rates on ore. March 23, 1912, plea of nolo contendere; fine of $7,000 imposed against Dock Company and $1,000 against Lake Shore.

26. United States *v.* Lake Shore & Michigan Southern Railway Company and Union Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat the published rates on ore. March 23, 1912, plea of nolo contendere; fine of $7,000 imposed against Dock Company and $1,000 against Lake Shore.

27. United States *v.* Lake Shore & Michigan Southern Railway Company and Angeline Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat the published rates on ore. March 23, 1912, plea of nolo contendere; fine of $1,000 imposed against Lake Shore. No action taken against Dock Company because the corporation was dissolved before filing of indictment.

28. United States *v.* Lake Shore & Michigan Southern Railway Company and Mahoning & Shenango Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat published rates on ore. March 23, 1912,

plea of nolo contendere; fine of $1,000 imposed against Lake Shore. No action was taken against Dock Company because corporation was dissolved before filing of indictment.

29. United States *v.* Robert Lipscomb, northern district of Alabama. April 27, 1911, indictment for false billing. May 7, 1912, verdict of not guilty.

30. United States *v.* D. T. McCabe, Dan R. Hanna, R. L. Ireland, Pennsylvania Company, and Ohio & Western Pennsylvania Dock Company, northern district of Ohio. April 26, 1911, indictment for conspiracy to defeat the published rates on ore. March 23, 1912, plea of nolo contendere; fine of $10,000 imposed against Pennsylvania Company and Ohio & Western Pennsylvania Dock Company, respectively. Case against individuals dismissed.

31. United States *v.* Mariconi Company, southern district of Ohio. February 22, 1912, indictment for false billing. March 18, 1912, plea of guilty. Fine of $20 imposed.

32. United States *v.* New Orleans & Northeastern Railroad Company, southern district of Mississippi. September 19, 1911, indictment for accepting concessions on shipments of coal. March 12, 1912, plea of guilty. Fine of $1,000 imposed.

33. United States *v.* New Orleans & Northeastern Railroad Company, southern district of Mississippi. September 19, 1911, indictment for accepting concessions on shipments of coal. March 12, 1912, plea of guilty. Fine of $1,000 imposed.

34. United States *v.* New Orleans & Northeastern Railroad Company, southern district of Mississippi. September 19, 1911, indictment for accepting concessions on shipments of coal. March 12, 1912, plea of guilty. Fine of $1,000 imposed.

35. United States *v.* New York, Chicago & St. Louis Railroad Company, northern district of Ohio. April 26, 1911, indictment for granting rebates on shipments of ore. March 23, 1912, plea of guilty. Fine of $3,000 imposed.

36. United States *v.* Nichols & Cox Lumber Company, western district of Michigan. March 9, 1912, indictment for accepting concessions in connection with transit shipments of lumber. June 22, 1912, verdict of guilty. Fine of $3,000 imposed.

37. United States *v.* Nichols & Cox Lumber Company, western district of Michigan. March 9, 1912, indictment for false billing in connection with transit shipments of lumber. April 26, 1912, demurrer sustained.

38. United States *v.* Norfolk & Western Railway Company, southern district of West Virginia. November 21, 1911, indictment for transporting free merchandise for Cassell & Elliott. April 5, 1912, plea of guilty. Fine of $4,000 imposed.

39. United States *v.* Pennsylvania Company, northern district of Ohio. April 26, 1911, indictment for granting rebates on shipments of ore. March 23, 1912, plea of guilty. Fine of $20,000 imposed.

40. United States *v.* Pittsburgh Plate Glass Company, southern district of Ohio. February 22, 1912, indictment for false billing. March 9, 1912, plea of guilty. Fine of $25 imposed.

41. United States *v.* Phoenix Carriage Company, southern district of Ohio. February 22, 1912, indictment for false billing. March 9, 1912, plea of guilty. Fine of $25 imposed.

42. United States *v.* Harry J. Rhein, Big Four Railroad Company, James E. Fennessy, The Henck Opera House Company, The Empire Circuit, northern district of Illinois. February 21, 1912, indictment for conspiracy to refund portion of the transportation charges paid by burlesque companies under the guise

of payments for advertisements in theatrical programs. May 7, 1912, plea of guilty entered on behalf of Big Four Railroad; fine of $10,000 imposed. Cases against other defendants still pending.

43. United States *v.* Harry J. Rhein, R. K. Hynicka, The Columbia Amusement Company, and the Big Four Railroad Company, northern district of Illinois. February 21, 1912, indictment for conspiracy to refund a portion of the transportation charges paid by burlesque companies under the guise of payments for advertisements in theatrical programs. May 7, 1912, plea of guilty on behalf of Big Four Railroad; fine of $10,000 imposed. As to Rhein case, nolle-pros. Cases against other defendants still pending.

44. United States *v.* Chas. F. Solomon, district of Arizona. December 21, 1911, indictment for false billing. May 1, 1912, nolle-pros entered.

45. United States *v.* Solomon-Wickersham Company, district of Arizona. December 21, 1911, indictment for false billing. May 1, 1912, plea of guilty; fine of $2,500 imposed.

46. United States *v.* Standard Carbonic Company, southern district of Ohio. February 22, 1912, indictment for false billing. March 8, 1912, plea of guilty; fine of $25 imposed.

47. United States *v.* Southern Excelsior Company, eastern district of Virginia. October 3, 1911, indictment for false billing. April 5, 1912, verdict of guilty; fine of $250 imposed.

48. United States *v.* Southern Railway Company, southern district of Alabama. December 4, 1911, indictment for transporting lumber to Mobile for export at less than legal rates. March 12, 1912, plea of guilty; fine of $1,000 imposed.

49. United States *v.* Standard Oil Company, western district of New York. August 9, 1907, indictment for receiving concessions on oil. December 6, 1911, verdict of guilty; fine of $55,000 imposed.

50. United States *v.* Sunday Creek Coal Company, northern district of Ohio. November 2, 1911, indictment for accepting concessions from legal rates. June 11, 1912, plea of nolo contendere; fine of $20,000 imposed.

51. United States *v.* W. H. Underwood, R. K. Hynicka, Columbia Amusement Company, and the Michigan Central Railroad Company, northern district of Illinois. February 21, 1912, indictment for conspiracy to refund a portion of the transportation charges paid by burlesque troupes under the guise of payments for advertising in theatrical programs. May 7, 1912, plea of guilty on behalf of Michigan Central Railroad; fine of $10,000 imposed. Nolle-pros entered as to W. H. Underwood. Cases against other defendants still pending.

52. United States *v.* D. W. Wickersham, district of Arizona. December 21, 1911, indictment for false billing. May 1, 1911, nolle-pros entered.

53. United States *v.* D. W. Wickersham, Chas. F. Solomon, M. Grider, and Chas. Wardwell, district of Arizona. December 21, 1911, indictment for false billing. May 1, 1912, nolle-pros entered.

54. United States *v.* Harold R. Wakem, southern district of New York. May 2, 1912, indictment for accepting rebates paid under the guise of commissions for soliciting import traffic. October 14, 1912, plea of guilty; fine of $1,500 and sentence of 24 hours in jail imposed.

55. United States *v.* Jules E. Bernard, southern district of New York. November 16, 1911, indictment for accepting rebates under the guise of commissions on import traffic. October 30, 1912, plea of guilty; fine of $2,000 and one day's imprisonment imposed.

56. United States *v.* Maurice Ascher, southern district of New York. November 16, 1911, indictment for accepting rebates under the guise of commissions on import traffic. October 30, 1912, plea of guilty; fine of $1,000 and one day's imprisonment imposed.

57. United States *v.* August Bontoux, southern district of New York. November 16, 1911, indictment for accepting rebates under the guise of commissions on import traffic. October 30, 1912, plea of guilty; fine of $1,000 and one day's imprisonment imposed.

58. United States *v.* Oscar F. Kosche, southern district of New York. November 16, 1911, indictment for accepting rebates under the guise of commissions on import traffic. October 30, 1912, plea of guilty; fine of $3,000 and one day's imprisonment imposed.

59. United States *v.* Albert E. Graser, southern district of New York. November 16, 1911, indictment for accepting rebates under tht guise of commissions on import traffic. October 30, 1912, plea of guilty; sentence suspended.

FRAUDS ON THE REVENUE.

In the matter of frauds in the importations of sugar at the port of New York, I stated in my last report the affirmance by the circuit court of appeals for the second circuit of the conviction of the highest guilty officers of the American Sugar Refining Co.—Heike, the secretary and treasurer, and Gerbracht, the general manager of the Brooklyn refinery. Since that time these defendants have applied to the Supreme Court for writs of certiorari, and the application of Heike was granted, the application of Gerbracht being denied. On motion of the Government the hearing in Heike's case has been advanced and set for January 6 next.

A thorough investigation which I have had conducted into the importations of sugar at the port of Philadelphia covering the period of 17 years subsequent to the reimposition of the duty on raw sugar by the Wilson Act in August, 1894, has disclosed short weighings and illegal collections of drawbacks. In settlement of these claims the Government has collected nearly a quarter of a million dollars, made up of $100,000 from the W. J. McCahan Sugar Refining Co. and $124,386.29 from the Franklin Sugar Refining Co. on behalf of itself and the Spreckels Sugar Refining Co. In addition, the Franklin Sugar Refining Co. has, as a part of the settlement, released the Government from liabilities on claims for excess collections of countervailing duties amounting to about $22,000.

The vigilant enforcement of the customs laws has been continued, 230 criminal convictions having been obtained during the fiscal year, and collections having been made in civil suits and compromises amounting to $608,469.61, and in criminal prosecutions, fines, forfeitures, and penalties amounting to $121,531.07, making an aggregate of $730,000.68.

The only cases remaining pending undetermined based on frauds resulting from fraudulent weighing or sampling of imported merchandise are:

1. A claim against the American Sugar Refining Co. for fraudulent sampling at the port of New Orleans. In this case the entries involved are now being reliquidated by the collector of the port, but have not yet been transmitted by him to the United States attorney for collection.

2. A claim against the Federal Sugar Refining Co. at New York, for underweighing imported sugars. These entries have been reliquidated by the collector, payment demanded of the company and refused, and a suit to enforce collection of $119,080.98 as unpaid duties has been recently brought in the District Court, Southern District of New York.

CENSUS FRAUDS PROSECUTIONS.

Early in 1911 the Secretary of Commerce and Labor advised this department that investigations made by the Bureau of the Census indicated that gross frauds had been perpetrated in a number of cities in certain Western States in the taking of the decennial census of 1910, by including in the population returns thereof thousands of fictitious names. On account of the apparent magnitude of the frauds and the possible difficulties to be met in bringing to justice the parties responsible therefor, it was deemed advisable to appoint a special attorney to take charge of the matter with a view to the prompt and vigorous prosecution of the guilty parties. I appointed for this purpose Mr. Cleveland A. Newton, an attorney of St. Louis, Mo., whose work was able, expeditious, and successful. Sixty indictments were returned; 47 defendants were convicted, 33 having pleaded guilty; 9 jail sentences were imposed, and fines were assessed aggregating $7,975, of which $7,375 was collected. Only a few cases remain undisposed of.

The prosecutions were for frauds in connection with the census reports for the following cities, viz, Fort Smith, Ark.; Billings, Missoula, and Havre, Mont.; Portland, Oreg.; Seattle, Spokane, Walla Walla, Bellingham, Aberdeen, Hoquium, and Tacoma, Wash.; and Superior, Wis. It was found that a total of 102,967 fictitious names had been added to the census schedules for these cities, ranging from 909 for Walla Walla to 32,527 for Tacoma.

The investigations in these cases showed that the padding of the census returns was due principally to the "boosting" spirit, and a feeling of rivalry prevailing in some cities, and that the general sentiment of some of the communities was largely responsible. It was on this account that the sentences, as a rule, were light. In one

case the judge, in sentencing a defendant who plead guilty, said: "I am going to be lenient with you because I feel that a majority of the community is just about as guilty as you are."

It is believed that the energetic and effective prosecution of these cases will have a beneficial effect in preventing similar frauds in connection with future census taking.

It is interesting to note that the special prosecutor, in reporting upon the action of the grand juries in these cases, says that "while there were individual members of most of the grand juries who at times exhibited hostility to the prosecutions, and while numerous grand jurors advised me that tremendous pressure was being exerted by outside influences to prevent the indictments, yet during the entire investigation no grand jury ever refused to return an indictment where, in my judgment, the evidence warranted it."

CANCELLATION OF FRAUDULENTLY PROCURED PATENTS FOR INVENTIONS.

On July 18, 1912, a decree was rendered by the United States District Court for the Eastern District of Pennsylvania, on the consent of both parties, canceling three letters patent fraudulently issued to John Allen Heany—one, No. 839585, issued December 5, 1906; another, No. 842546, issued January 29, 1907; and the third, No. 872,946, issued December 3, 1906—all relating to metallic filaments for electric lamps.

Heany, an American inventor, filed a number of applications in the Patent Office relating to metallic filaments. His early applications were filed in December, 1904, and January, 1905. Two years later, and after the filing by others of numerous applications covering their inventions in the same field, one Ned W. Barton, the assistant examiner in the office on these applications, removed the specifications from two of Heany's applications and substituted forged papers ascribing to Heany many of the discoveries of the other inventors, and upon these forged papers the three patents above mentioned were issued. The frauds also involved numerous other applications of Heany's still pending.

The discovery of these facts resulted in the prosecution in the District of Columbia of Heany, Assistant Examiner Barton, and one Henry E. Everding, who had acted as Heany's attorney. The examiner and lawyer were convicted and served terms in the penitentiary; Heany was acquitted.

A formal hearing in the Patent Office concerning the pending applications resulted in the denial of patents on all of them.

The testimony at the criminal trial and in the Patent Office investigation was so full that it was deemed unnecessary to retake the testimony in the equity suit. Counsel filed a stipulation admitting that

the patents were obtained as the result of the fraudulent acts of the assistant examiner and the patent attorney, this stipulation expressly excluding from determination the question of Heany's own participation in the fraud.

The result of this litigation is to render nugatory a remarkable attempt to fraudulently obtain patents claimed to be of enormous value. It should be said, to the credit of the country, that, so far as I can ascertain, this is the only attempt of its kind made in the history of the Patent Office.

PUBLIC LANDS DIVISION.

At the beginning of the fiscal year there were pending in the courts approximately 992 civil cases and 313 criminal cases involving public lands. During the year there were begun 309 civil cases and 121 criminal prosecutions. During the same period 522 of the civil cases and 219 of the criminal cases were terminated.

Of the civil cases, 289 were decided in favor of the Government, 58 were compromised, 62 were lost, and 113 were discontinued, leaving 779 pending at the close of the year. Of the criminal cases, 107 were won by the Government, 99 were nol prossed, and 13 were lost by acquittal, quashing of indictments, etc., leaving 215 pending at the close of the year.

The Government recovered judgments in the aggregate amounting to $269,664.66, with costs amounting to $21,838.44. There was collected on civil judgments $200,200.98. Fines in criminal proceedings were imposed in the amount of $15,339.01, besides $9,335.38 in costs. There was collected on account of fines and costs the sum of $5,881.14. Collections in both civil and criminal matters were, in part, upon recoveries had prior to the fiscal year. Unlawful inclosures were removed from 140,690 acres of the public domain, and title to and possession of 40,091 additional acres were restored through actions in ejectment and suits to annul patents.

Of proceedings relating to Indian lands, there were, at the beginning of the fiscal year, approximately 1,708 civil cases and 35 criminal cases. During the year 491 civil cases were instituted and 225 disposed of, leaving 1,974 pending at the close of the year. Of the civil cases, 195 were decided in favor of and 30 adversely to the United States. Fifty criminal cases were instituted during the year and 37 disposed of, 10 by convictions and pleas of guilty, 3 by acquittal, and 24 by nolle prosequi and dismissal. Forty-eight criminal cases were pending at the close of the year.

A comparison of the reports of this year and last year will show a variance in the number of cases pending at the beginning of this year and those pending at the close of last year. This is attributable to improvements in the system for securing complete and accurate

reports from the United States attorneys. It is believed that the number of cases shown as pending at the beginning of this year is substantially correct.

OREGON AND CALIFORNIA LAND-GRANT SUITS.

The instituting of these suits and the subsequent proceedings therein have received special mention in my annual reports for the past two years. The principal suit involves the lands still held by the railroad company, aggregating approximately 2,300,000 acres, of the approximate value of $50,000,000. In addition to the principal suit, 45 suits were instituted against purchasers of these lands that were sold in violation of the restrictions imposed by the granting acts. These suits against the purchasers involve approximately 390,000 acres, of a value of about $15,000,000. Since my last annual report the defendants in the principal suit have interposed answers, issues have been joined, and the taking of testimony is nearly concluded. It is hoped that the suit will be submitted for final decision within the next two or three months.

In the meantime the defendants in the suits against the purchasers made proposals to compromise their suits by stipulating for decrees of forfeiture with a privilege of repurchasing from the Government at $2.50 per acre. In view of the fact that these suits were instituted pursuant to specific instructions by Congress, I declined to entertain this proposal without further instructions from Congress. The general grounds upon which the compromising of these purchaser suits was urged were (1) that the purchasers bought the lands in good faith, without actual knowledge of the restrictions imposed by the granting act, paid full market value, and have since paid taxes on the lands and in many instances improved the same by the construction of milling plants, including logging railroads, sawmills, etc.; (2) that the industrial and commercial interests of western Oregon have been developed largely upon the faith of these titles, and to disturb them now would cause more public injury than good. After extended hearings before the Public Lands Committees of both Houses, Congress passed the act of August 20, 1912, authorizing the Attorney General to compromise these suits upon the terms proposed.

OIL LAND SUITS AGAINST THE SOUTHERN PACIFIC RAILROAD CO.

In my last report (p. 31) I called attention to certain proceedings in equity brought against the Southern Pacific Railroad Co. and others for the purpose of annulling patents issued to that company in 1904–5, under the act of July 27, 1866, purporting to convey some 8,000 acres of land believed to be chiefly valuable for petroleum. I have now to report that rapid progress has been made in

the most important of these suits. The case, involving the title to 6,000 acres situate in the Elk Hills, in the southern district of California, valued at $18,000,000, has been brought to an issue, and all of the Government's testimony in chief has been taken. The showing thus far made seems to be most satisfactory, and the prospects for a speedy hearing and determination are excellent.

This litigation rests upon the theory that the mineral lands in question were erroneously patented by the General Land Office, whose officials were misled by representations made in behalf of the railroad company that the lands were nonmineral. The patents contained no express exceptions of mineral land, and the suits were begun within the period of six years fixed by statute as a limitation upon the time within which suits to annul patents may be commenced. In this connection it is proper to refer to other litigation concerning the same character of subject matter (mineral, and particularly petroleum lands of immense value) but of different legal aspect, which is soon to arise between the Government and the Southern Pacific Railroad Co. and others claiming under it. The legislation under which that company obtained its grants of public lands expressly excepted mineral lands other than lands valuable chiefly for iron or coal. A large number of patents have heretofore been issued to the company which in express terms except from the premises patented all mineral lands other than iron or coal lands. Among the lands described in these patents which, but for the exceptions, the patents would purport to convey, are large areas of petroleum-bearing lands in California, said to be of a value exceeding $500,000,000. It is the contention of the railroad company and those claiming under it that the exceptions in the patents are void. This department, however, and the Department of the Interior have for many months been engaged in making preparations to institute suits in equity for the purpose of testing this question judicially, contending that, in view of the provisions of the granting acts, the express terms of the exceptions of the patents, and the circumstances under which the patents were delivered and accepted, the exceptions are not void, but must be deemed valid and operate to exclude the petroleum lands in controversy and all other mineral lands from the premises granted by the patents. The preparations for the institution of these suits are about completed, and the suits will be instituted at an early day. In the meantime a case to which the Government was not a party, but which involves directly some of the points which the Government will raise in its proposed litigation, has reached the Supreme Court upon certification of questions by the Circuit Court of Appeals for the Ninth Circuit, and has been advanced for hearing in January next. Upon motion of the Solicitor General, the court granted leave to the United

States to file a brief. (Burke *v.* Southern Pacific Railroad Company et al., No. 682, October term, 1912.)

SUNK-LAND CASES.

In my last report (p. 31) I took occasion to refer to important litigation in Arkansas respecting the so-called sunk lands. The first of the suits there mentioned, which, since the questions involved in all of them are identical in principle, may be regarded as a test case, has received particular attention with a view to expediting its hearing and determination as much as possible. The special assistant attorney in charge of these matters has succeeded in bringing the case to an issue and in completing the Government's evidence. This litigation, aside from the great value of the land and timber, is particularly important as a protective measure in the interests of numerous citizens who have entered the tracts in controversy in good faith under the homestead laws of the United States, but are almost certain to be ousted of their rights if not upheld by the action of the Government.

WATER RIGHTS.

Experience of the past year has confirmed the opinion which I have previously expressed as to the need of special measures to safeguard the water rights reserved by the Government in the execution of its reclamation laws. Many millions of the public moneys have already been expended in the reclamation projects, and further expenditures, vast in amount, are making and in contemplation. Thousands of citizens are encouraged and invited to take up their abodes upon the irrigable areas and to stake their fortunes upon the success of these enterprises. It needs no arguments to convince one that the welfare of these citizens and the honor of the Government, as well as the safety of its investments, are involved in the assurance of an adequate supply of water. It has been the habit of the Government to abstain from the erection of expensive public buildings until the title to the building sites has been most carefully examined by this department and found to be securely vested in the United States. No less caution should be observed in regard to these rights to the use of water, without which the irrigation works when constructed, so far from being the instruments of reclamation, will stand as monuments of public waste.

The growing importance of irrigation in the arid and semiarid States has already led to the appropriation of most of the available surplus waters, and often it develops that the various claims made to water from a common source are excessive and conflicting. With the increase of enterprise and development this condition tends to arise and to grow more and more aggravated in respect to every important supply. Thus the Government has found, and as time

goes on will discover increasingly, that the assertion of its rights in behalf of the reclamation projects is complicated by the rival claims of others. Litigation, therefore, in nearly every instance will become inevitable, and upon the results of the litigation may depend the fortunes of the projects affected thereby. Those who are familiar with this kind of litigation are aware that it is usually tedious, expensive, and complex, and requires much care and special skill in its preparation and conduct. For the foregoing reasons I deem it of capital importance that the department should be equipped with an adequate force of specially trained lawyers to represent the Government efficiently in the suits which it will be bound to bring, and to cooperate with the Reclamation Service in preparing the cases with the utmost care before they are instituted. The evidences of the Government's appropriations of water should everywhere be inquired into, perfected, and preserved. All hostile claims of others and the evidences upon which they are based, or which tend to combat them, should also be minutely examined with the least possible delay. Congress at its last session, in spite of my urgent recommendations, refused to make the appropriation which would have enabled me to inaugurate this useful service. I therefore invite attention to the subject once again, in the hope that it may receive the attention which its importance deserves.

OCCUPATION OF NATIONAL FORESTS BY POWER COMPANIES.

Suits have been instituted in Utah and Colorado to restrain various power companies from operating power plants and transmission lines within the national forests. This litigation was requested by the Secretary of Agriculture, but was withheld for a time in the hope that it might become unnecessary. It is the contention of the Government in these cases that the only present means whereby the companies may secure a lawful status within the reservations is by applying for and obtaining revocable permits or licenses from the Secretary of Agriculture under the act of February 15, 1901 (31 Stat., 790). The companies, however, are unwilling to do this, and set up claims of right under earlier statutes. It was thought possible that Congress, at its last session, might enact a new law under which, with due regard for the interests of the public, a tenure more stable than the revocable license might be held out to enterprises of this character, and that in that event the companies would accept the offer and abandon their adverse claims. As soon as it became evident that such a law could not be expected, dispositions were made for commencing the suits. Such a suit was begun against the Henrylyn Irrigation District and others in Colorado to restrain the construction within a national forest of a long tunnel projected to pierce the Continental Divide and divert water from the Grand River, for use

both in irrigation and in generating electrical power for commercial disposition. The defendants claim a right to proceed under the irrigation right of way law of March 3, 1891, sections 18–21 (26 Stat., 1095), though their application has not been approved by, but has merely been filed with, the Secretary of the Interior. The case was argued on demurrer to the bill last August, briefs were subsequently filed, and the demurrer has recently been overruled by the district court.

A suit against the Hydro-Electric Co., to enjoin the construction and operation of a power pipe line within the Mono National Forest has been vigorously prosecuted in the northern district of California, with results thus far entirely favorable to the Government.

SUITS TO CANCEL UNLAWFUL CONVEYANCES OF INDIAN ALLOTMENTS.

FIVE CIVILIZED TRIBES.

The four test cases in the Supreme Court referred to in my last report (p. 32) were decided in April. (Heckman *v.* United States, 224 U. S., 413; Mullen *v.* United States, id., 448; Goat *v.* United States, id., 458; Deming Investment Co. *v.* United States, id., 471.)

In the first of these cases, and indeed in all, the right of the United States to bring suits to annul conveyances of allotments alleged to have been made in violation of the restrictions of the treaties and statutes dealing with the Five Civilized Tribes, and in so doing to join as defendants large numbers of persons claiming under similar conveyances, but having no community of interest, was squarely considered and sustained. Thus the judgment of the circuit court of appeals upon these questions was upheld, and the contrary decision of the Circuit Court for the Eastern District of Oklahoma, which had halted the progress of this extensive and important litigation, was reversed. The questions of alienability involved in the four test cases were also determined by the Supreme Court, favorably to the Government's contention in the Heckman case, and for the most part adversely in the other three.

This action of the Supreme Court affords a complete vindication of the course which the department has pursued in commencing and prosecuting the litigation as a whole, and opens the way for speedy settlement of the various questions of alienability which did not reach that court, but are yet to be determined in the numerous cases still pending in the district court and in the court of appeals. Such of these as involve the classes of conveyances held lawful by the Supreme Court, have either been dismissed or are in process of being dismissed as rapidly as their legal status can be examined into and their identity ascertained.

In July last an extended series of hearings was had in the district court for the purpose of adjudicating the different questions of alienability raised by the demurrers to the bills there pending. Decisions on these questions have since been rendered, in many instances favorably to the Government, in others adversely. Their public importance will doubtless lead to appeals, both by the Government and by parties defendant, representative cases being selected, for the purpose of obtaining prompt determinations by the higher courts of the more important and obscure questions of alienability.

About 800 tracts of land were eliminated from the litigation during the last fiscal year as a result of quitclaims from defendants to allottees, and many more by reason of other adjustments made upon terms favorable to the Indians.

Determination of the questions of alienability will mean, I believe, a determination of practically the entire litigation. I am impressed, however, with the desirability of providing means (of course with the sanction of Congress) whereby the equitable adjustment of these and similar controversies might proceed out of court under definite regulations, in instances where the purchase of the land, though forbidden by the law, was attempted fairly and in entire good faith.

SEMINOLE NATION.

At its last session Congress increased its appropriation for suits affecting Seminole allotted lands in Oklahoma to $15,000. The results of the work supported by this appropriation have been gratifying. One hundred and forty tracts of land, aggregating 14,209.43 acres, have been restored to the allottees, almost 90 per cent of it by quitclaim deeds without suit. Of the five criminal cases tried, four terminated in conviction and one in acquittal. In two criminal cases pleas of guilty were entered. As a result, six criminals were committed to the State penitentiary for terms varying from two years to life. Forty civil and twenty-one criminal cases were pending at the close of the year.

QUAPAW AGENCY-INDIANS.

The attorney employed on behalf of the Indians within the Quapaw Agency had so far completed the work there that his services were terminated August 31 of this year. Such cases as remained undisposed of have been assigned to the United States attorney for the eastern district of Oklahoma.

WHITE EARTH LAND-FRAUD CASES.

The prosecution of the White Earth Indian Reservation land frauds in the State of Minnesota, mentioned in the report of last year, has been continued along the same lines during the past year.

About 300 additional suits have been instituted by the Government for the recovery of lands unlawfully obtained from the Indians upon the White Earth Reservation and for accounting for timber cut and removed from the lands.

At the request of the Secretary of the Interior, other suits are now being prepared for filing, based upon the further investigations of the past year. Practically 1,300 suits in all have been filed, and about 1,000 of them are at issue. Three special examiners have been appointed by the United States District Court of Minnesota to take and report testimony in these suits. The Government's case in chief is filed with the examiners in these suits by stipulation, and in about three-fourths of the pending suits such stipulations are already filed with the examiners. These stipulations are being filed with the examiners at intervals of about 30 days at the present time, and by the end of the present calendar year it is estimated that such stipulations will have been so filed in practically all the cases which are at issue and that the defendants will be well along with the work of submitting their testimony.

COMPROMISES.

During the year a large number of offers of compromise have been received. Each offer has been given the most careful consideration, and where it appeared that the best interests of the Government would be served by its acceptance such action has been taken.

I instance in this connection the compromise of timber trespass cases in the western district of Arkansas against the Ingham Lumber Co., whereby the Government obtained $16,000; the compromise of cases in the district of Colorado against the Utah and Calumet Fuel Cos., wherein 6,706.01 acres of valuable coal lands were recovered; the cases against the Montezuma Lumber Co., in which 800 acres of lands and $4,000 were secured; and the New Mexico and Pagosa Lumber Cos., from which $60,000 were received; and the compromise of the case in the district of Nevada against the Golconda Cattle Co., where $2,500 was paid for the use of lands alleged to have been unlawfully inclosed.

Numerous offers of compromise were receiving attention at the close of the year, among which I may mention the offer of the Oregon Lumber Co., which has since been accepted and the fulfillment of which has returned to the Government $26,250 in cash and about 6,100 acres of timber land in Oregon.

INDIAN MATTERS.

The policy of allotting Indian tribal lands to the individual members of the tribe and of breaking up the tribal relations of the Indians has raised important questions in reference to the construction

of the words "Indian country," particularly in the laws concerning the liquor traffic. The most vexatious of these questions was whether the extinguishment of Indian title to small individual lots in the midst of reservations took those particular lots out of the scope of "Indian country." This question was finally passed upon by the Supreme Court in the case of Clairmont *v.* The United States, in which it was held that such lots ceased to be "Indian country" upon the extinguishment of the Indian land title.

Another important question which arose was the question whether after the admission of Oklahoma into statehood the Federal Government still retained the power to prevent the introduction of liquor into that portion of Oklahoma which was formerly the "Indian Territory." This question was decided by the Supreme Court in the matter of Charley Webb, where it was held that the power of the United States still continued to prevent the introduction of liquor from other States into that portion of Oklahoma.

BUREAU OF INVESTIGATION.

IN GENERAL.

The work of this bureau during the past fiscal year has greatly increased, particularly in connection with investigations of violations of the antitrust laws, neutrality statutes, and the white-slave traffic act, although there also has been a steady growth in the work required in connection with the investigations of other classes of crimes.

Following the publication of the decisions in the Standard Oil and Tobacco Trust cases in May, 1911, the department was literally deluged with complaints against various industrial organizations which were alleged to be operating in violation of the Sherman antitrust law. These complaints received due consideration, and the various charges made by the complainants were thoroughly sifted out and examined into by the agents of the Bureau of Investigation. These investigations covered a wide range of territory and related to practically every field of business activity, the agents participating monthly in an average of more than 41 investigations. The evidence collected by the special agents has formed the basis of most of the suits and criminal actions which have been instituted under the provisions of the antitrust law during the fiscal year. In many instances the facts developed did not justify the institution of proceedings, but a vast fund of information was accumulated which will be exceedingly valuable for reference in dealing with cases of this character in the future. Through the systematic distribution of this work among the various geographic divisions of the field force the cost has been kept at a minimum.

VIOLATIONS OF NEUTRALITY STATUTES.

The unsettled condition of affairs in the Republic of Mexico has necessitated a very large amount of work along the border between that country and the States of Texas, Arizona, and New Mexico, and the passage of the joint resolution of March 14, 1912, and the President's proclamation of the same date in pursuance thereof resulted in a very material increase of work in that territory. The agents who have been engaged in this work have been especially successful, having completely frustrated the efforts of Gen. Bernardo Reyes to set on foot in this country an expedition against the Government of Mexico, and having secured evidence warranting the arrest of Emilio Vasquez Gomez and a number of his most influential followers on a charge of conspiracy to violate the neutrality statutes, thereby putting a stop to the activities of these persons in violation of the laws of this country. The cases against Reyes and his followers resulted in the conviction of 14 men in the southern district of Texas and 10 men in the western district of Texas. The investigations of violations of the joint resolution of March 14, and the President's proclamation of the same date, above mentioned, have already resulted in a large number of convictions, and there are now pending in the western district of Texas and elsewhere a number of important cases growing out of the unlawful exportation of munitions of war to Mexico. The larger number of these cases naturally are against adherents of the revolutionary forces, but indictments have been returned against persons alleged to have been operating on behalf of the Federal Mexican Government, and it has been the aim of the department to enforce the neutrality statutes with absolute impartiality. The convictions of Ricardo Flores Magon, Enrique Flores Magon, Anselmo L. Figueroa, and Librado Rivera, for conspiracy to violate the neutrality statutes, which were secured in the southern district of California, which resulted in each of the defendants receiving a sentence of 23 months in the penitentiary, are of great importance, and should have exceptional deterrent effects on that class of unprincipled professional agitators who have caused so many disturbances in the Latin-American countries.

VIOLATIONS OF THE WHITE SLAVE TRAFFIC ACT.

Owing to the tremendous increase in the number of violations of this law coming to the attention of the department, and the appalling conditions thereby revealed, in the latter part of April of this year I appointed a special commissioner for the suppression of the white-slave traffic, who is now engaged in putting into effect a comprehensive plan for the enforcement of the white slave traffic act and the prevention, as far as possible, of these violations. This plan includes the selection of local white-slave officers, who render service

for nominal compensation, and it is believed that the carrying into effect of the present plans for the suppression of this traffic will result in very decided improvement of conditions, in the lessening of the violations of this law, and in rendering particularly difficult the perpetration of the most vicious class of offenses against the act. In the enforcement of this act the department has been careful to refrain from instituting technical or trivial cases, or cases which more properly belong in the State courts, and has restricted itself to the class of cases at which the act was primarily directed. As a result, during the period from July 25, 1910, to October 31, 1912, these prosecutions resulted in 337 convictions and 35 acquittals; 106 cases are pending. A schedule of these cases is contained in the appendix. The sum of $100,000, out of the appropriation for "Detection and prosecution of crimes," has been set apart for this work. The nation-wide investigation and prosecution for which the organization of the bureau is being perfected will require a much larger sum, and application will be made for an appropriation of at least $200,000 to carry it on.

VIOLATIONS OF THE POSTAL LAWS.

The Bureau of Investigation has also participated in a monthly average of 27 investigations of violations of the postal laws. Its work in connection with these cases has been largely to supplement in the most important cases by the use of expert accountants, the work of the post-office inspectors, and in otherwise cooperating with those officers; the enforcement of the laws with reference to the fraudulent use of the mails having been left primarily to the Post Office Department, with whose inspection service the Bureau of Investigation has cooperated in entire harmony.

ILLEGAL INTERSTATE SHIPMENT OF INTOXICATING LIQUOR.

The enforcement of sections 238, 239, and 240 of the Penal Code, which are new provisions of law governing the interstate shipment of intoxicating liquors, has also entailed considerable additional investigations, the number of investigations pending during the month of June being 54, and having increased to more than double that number during each of the last few months of the fiscal year. A very large number of important convictions have been obtained, and the beneficial effect of these prosecutions is already apparent.

BUCKET-SHOP CASES.

By the decision of the Supreme Court of the District of Columbia, sustaining a demurrer to the indictment of certain individuals for conspiring to violate the act of March 1, 1909, prohibiting the keeping of bucket shops in the District of Columbia, the bonds of a number of important defendants were released, and after the court of appeals by a unanimous opinion reversed the decision of the lower

court it was necessary to again institute proceedings to remove them to the District of Columbia for trial. These removal proceedings have been successfully conducted, the defendants arraigned, and the cases will be brought to trial in the near future.

The so-called Scheftels case has been brought to a successful conclusion by the conviction of the two principal defendants, and the Capital Investment Co. case has recently been concluded by pleas of guilty on the part of three of the defendants and the imposition and payment of fines amounting to $10,000 and costs.

VIOLATIONS OF THE NATIONAL BANKING LAWS.

There has been an appreciable falling off of criminal violations of the national banking laws reported to this department by the national bank examiners during the past fiscal year. In my judgment this has been largely due to the deterrent effect of the numerous convictions of defaulting bank officers which have been secured in the past few years through the expert work of the bank accountants of the Bureau of Investigation. In addition to the preparation of cases arising under the national banking laws which have been prosecuted to final judgment during the year, many irregular practices in the national banks of the country have been stopped as a result of the investigations conducted by these accountants, who have effectively cooperated with the national bank examiners in every proper way. As above suggested, in a number of instances the services of these accountants have been utilized to good advantage in the preparation of cases under the postal laws, involving the fraudulent use of the mails in the promotion of fake stock-selling concerns of various descriptions, and in the preparation of statements and schedules of a technical nature for use in the prosecution of cases under the antitrust law.

MISCELLANEOUS.

As a result of investigations by this bureau numerous prosecutions have been instituted for criminal violations of the bankruptcy act and for violations of section 32 of the Criminal Code, which relates to fradulent impersonation of Government officers, and an increasing number of prosecutions for the violations of the many criminal laws as to which no investigating force is particularly provided have been handled by this bureau. Several fugitives from justice have been apprehended.

Particular mention should also be made of the so-called dynamiting cases, involving the interstate transportation of high explosives by members of the International Association of Bridge and Structural Iron Workers, the trial of which cases began in Indianapolis on

October 1, 1912; and of the investigation of charges brought against United States Circuit Judge Robert W. Archbald, which has resulted in the impeachment proceedings now pending before the Senate.

INVESTIGATIONS OF THE OFFICES, CONDUCT, ETC., OF COURT OFFICIALS.

Including a slight increase during the year, the number of examiners in the field at the close of the fiscal year was 13. In addition to making special investigations as required, general examinations were commenced or completed, or both, this year in 24 judicial districts or divisions, including a number of the larger and more important ones.

Special field examinations to test the accuracy of charges in the accounts of United States marshals and deputy United States marshals were also made by a special examiner in Colorado, northern Georgia, western Oklahoma, and southern West Virginia.

In the foregoing districts the following facts are worthy of special note:

Middle Alabama.—Following a special examination of the office of the referee in bankruptcy at Dothan the referee was superseded at the expiration of his term by another appointee. At the beginning of the present calendar year the defaulting deputy clerk of the district court in this district entered upon the services of a sentence of one year in the penitentiary which had theretofore been imposed and temporarily suspended.

California, northern.—Investigations discovered that the commissioner at Eureka had been indulging in very questionable transactions in the procurement and final disposition of cash bail deposited in cases pending before him. Upon presentation of the facts to the district judge his resignation was demanded and accepted.

Georgia, northern.—Following an examination showing the conversion of approximately $10,000 of composition funds, fines, etc., and the falsification of his emolument returns, the resignation of the district clerk has been accepted, and proceedings are under way in the Treasury Department to institute suit for the recovery of approximately $13,000 claimed as due the United States.

Georgia, southern.—Following an examination of two months' time the district clerk was removed because of unsatisfactory conditions in his office.

Washington, western.—A clerk of the district court and deputy clerk of the circuit court at Seattle, who had been found short in his accounts of deposits for fees in a sum of about $9,500, and whose resignation had been accepted, was indicted by the grand jury, pleaded guilty, and has been sentenced to two years in the penitentiary and the payment of a fine.

The investigations in that district also disclosed that the then clerk of the circuit court and deputy clerk of the district court at Tacoma was also short in his accounts and had converted

official moneys to his own use. He has been removed from office and indicted; will be tried shortly.

South Dakota.—A considerable shortage in the trust funds in the official possession of the clerk's offices was found, as well as serious irregularities in the matter of handling such funds, and steps taken to remedy these matters.

In addition to the foregoing, it is seen from the reports of the examiners that much has been done in the routine features of the work in correcting improper practices, straightening tangled accounts, improving the methods of the various court officers, etc.

In the districts named below matters which originated in the work of examiners in prior years have progressed as follows:

Iowa, southern.—One of the suits pending against a former clerk of the United States circuit court to recover trust funds amounting to about $13,000 has been tried by the court without a jury. The decision has not yet been rendered.

Massachusetts.—An unsatisfied claim against the clerk of the district court for $8,812.84 unreported emoluments has been settled by the acceptance of an offer of compromise in the sum of $6,500.

Michigan, eastern.—The suit against a former clerk of the circuit court to recover a large amount of trust funds has been referred to an auditor, and it is expected that this case will come to trial in November of this year.

New Mexico.—A balance of $349.65 remaining due from a former clerk on account of moneys converted to his own use, has been made good by the surety company without suit.

In the past four years, examiners have necessarily devoted very considerable periods of time to individual districts, because of the very exhaustive investigations made of moneys that had come into the official custody of clerks of the United States courts—such investigations saving to litigants hundreds of thousands of dollars—and also because of the investigations of the status of pending United States cases. The latter work is practically completed, and the condition of moneys in the hands of clerks of courts has been so much improved as to justify the belief that work incident to this matter will hereafter consume a much smaller proportion of the time devoted to each district. At the present rate of progress it is believed that within approximately two years it will be possible to make a full round of the judicial districts once every two years, or more frequently, instead of at the rate of once in four years, as at present.

When that time arrives, it will be practicable to undertake in every district what has heretofore been done only in isolated instances, to wit, the examination of the offices of referees in bankruptcy, authority for which is now given from year to year in the annual appropriation acts. The necessity for an examination generally of referees' offices has been suggested to the examiners many times in various ways, and those suggestions seem to be confirmed to a considerable

extent by the isolated examinations made. The work so far performed indicates that serious consideration should be given to the questions as to whether or not a limitation should be put on attorney's fees in bankruptcy proceedings, and as to whether expenses in referees' offices should include such items as office rent, general stenographic services, etc.

Other questions arising from time to time in bankruptcy matters which may require action by Congress to adjust are as to what fees should be collected by clerks of court, where a partnership and the individual partners file petitions in bankruptcy or are adjudicated bankrupts at the same time, and what fees should be collected by the clerk for his services in ancillary proceedings.

The importance of amending the act of February 13, 1911, entitled "An act to diminish the expense of proceedings on appeal and writ of error or of certiorari" is respectfully urged. The courts have had great difficulty in construing this act, and much "judicial legislation" has been enacted in rules of court to provide compensation for the clerk for services which seem to be required by the act, but for which no compensation has been provided by law. In some districts the courts have almost or quite nullified the act by directing that the papers in a case shall not be taken from the custody of the clerk, that copies may be made by litigants only during regular office hours, and in the presence of the clerk, etc. The logical effect of such rules is that many or all transcripts prepared in such districts are made by the clerk in the same manner as prior to the enactment of the above-mentioned act. In other districts the courts have prescribed a fee of so much per folio or so much per page to be paid the clerk for comparing the printed record before certifying the same. No compensation for comparing has been provided by law.

The variety of questions arising in connection with the examination of the accounts of court clerks emphasizes the wisdom of putting them all on a salary basis and requiring all fees and emoluments received by them to be paid into the Treasury of the United States. I respectfully urge the passage of the bill to accomplish this purpose now pending before Congress.

In my report of last year, page 22, I stated that a large amount of work was being done in the investigation of offices of clerks of United States courts and that the need of such investigation was thoroughly demonstrated by the results obtained, irregularities having been found to exist in a large number of the clerks' offices and actual dishonesty in others.

The following is a recapitulation of the work done in this line:

Number of offices examined	220
Number of offices in which serious irregularities were found	28
Number of clerks resigned or dismissed	10
Number of clerks indicted	6
Number of clerks convicted	3

The seeming disparity between the number of offices in which serious irregularities were found and the number of clerks resigned or dismissed, indicted, and convicted is explained by the statement that in some instances where serious irregularities were found the persons responsible therefor had died, or criminal prosecutions were barred by statute or criminal liability could not be established.

OPINIONS OF THE ATTORNEY GENERAL.

During the fiscal year 1912, 64 opinions were rendered by the Attorney General; 7 upon requests of the President and 57 upon requests of the heads of departments.

Title opinions and condemnations.

Three hundred and twenty-five opinions were rendered relating to the title to lands to be acquired by the United States for public purposes, valued in the aggregate at $5,000,000, so far as can be ascertained. Some of these were not strictly title opinions, but related to easements, rights, and other matters arising out of lands, water rights, and questions in relation to rivers and harbors, but all connected with land. During the same period there were conducted 125 suits for the condemnation of land, rights, or interests therein.

Under the act of June 25, 1910, for the enlargement of the Capitol Grounds, two squares in this city have been condemned and taken, and there is now pending a suit to acquire 10 more squares for the same purpose. Under the Appalachian Forest bill, approved March 1, 1911 (36 Stat., 961), much work has been done upon the title to 300,000 acres of land to be acquired for the purposes of said act.

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BUSINESS TRANSACTED IN THE UNITED STATES DISTRICT COURTS.

Number of cases commenced during the year.

Civil cases to which the United States was a party	4,001
Criminal prosecutions by the United States	15,953
Admiralty cases	1,636
Other suits to which the United States was not a party	9,356
Bankruptcy petitions filed	19,745
Total	50,691

Collections, judgments, fines, etc.

Collected by the United States in civil cases	$1,164,427.95
Collected by the United States in criminal prosecutions	854,506.04
Collected through the office of the Solicitor of the Treasury in compromise of claims not in suit	730,136.16
Total collected by the United States	2,749,070.15

Miscellaneous.

Judgments for plaintiffs in admiralty cases	1,636,677.51
Judgments for defendants in admiralty cases	31,820.66
Judgments for plaintiffs in other cases to which the United States was not a party	72,095,263.21
Judgments for defendants in other cases to which the United States was not a party	$702,041.18
Total liabilities in bankruptcy cases closed during the year	170,153,496.75
Total assets realized in bankruptcy cases disposed of during the year	38,554,099.64

Number of cases pending July 1, 1912.

Civil cases to which the United States was a party	5,662
Criminal prosecutions by the United States	9,503
Admiralty cases	5,440
Other cases to which the United States was not a party	48,830
Bankruptcy petitions	32,864
Total	102,299

BUSINESS TRANSACTED IN THE UNITED STATES COMMERCE COURT.

The cases of United States *v.* Atchison, Topeka & Santa Fe Railway Co. et al. and United States *v.* Union Pacific Railroad Co. et al., known as the Intermountain Rate cases, involving the constitutionality and construction of section 4 of the interstate commerce act as amended by the act of June 18, 1910 (the long-and-short-haul clause), on appeal from the decision of the Commerce Court, which reversed the orders of the Interstate Commerce Commission, were argued in the Supreme Court February 23, 26, 27, 1912, and were on April 8, 1912, by order of the court, restored to the docket and assigned for reargument at the October, 1912, term. The cases were reargued at the present term before the full bench and resubmitted to the Supreme Court, where they are now pending undetermined.

There were pending in the Commerce Court November 1, 1912, 22 suits brought to review orders of the Interstate Commerce Commission.

* * * * * * *

In my opinion the Commerce Court has proved a far more satisfactory instrument for the determination of legal questions arising out of orders of the Interstate Commerce Commission than the former

method by which such questions were passed upon in the various circuit courts throughout the country.

It is much more expeditious; it has upheld the commission in a larger portion of cases than did either the circuit courts or the Supreme Court; and it has granted temporary injunctions with less freedom than the circuit courts did.

I believe it would be very injurious to the interests of the public, as well as to the due, convenient, and expeditious administration of justice, to now return to the old plan of distributing the litigation among the many district courts of the United States. To require the defense of these cases coincidently in all parts of the country will lead not only to serious inconvenience and greater expense, but inevitably to greater delay, and in this class of cases delay is most seriously disadvantageous to the public.

In my opinion, the criticisms which have been made of the Commerce Court are due chiefly to the fact that the scope of judicial review over the orders of the commission has not yet been clearly defined either by act of Congress or by authoritative decisions of the Supreme Court. This difficulty would be met by legislation which should—

(1) Require the commission to state in its report, as a basis for its order, the findings of fact and the reasons on which the order is based.

(2) Provide that all findings of fact and conclusions of policy appearing in the said report shall be final and conclusive.

(3) Limit court review exclusively to questions of law arising upon the commission's report.

The most important decisions which have been made under the Commerce Court act were those of the Supreme Court in Procter & Gamble *v.* The United States and in Hooker et al. *v.* The United States, where it was held that the Commerce Court had erred in taking jurisdiction over orders of the Interstate Commerce Commission which refused any relief to shippers, because the orders merely denied relief to the petitioners.

I recommend that the act be amended so as to provide that the Commerce Court shall have jurisdiction to review all errors of law (as distinguished from questions of fact) in respect to orders of the commission which deny relief to shippers or any other parties entitled to apply to it, to the same extent as they now have jurisdiction to set aside orders granting relief. The practical result of the present situation is that, in general, the shippers have no relief against errors of law by the commission, such relief being limited substantially to the railroads.

The responsibility for the conduct on behalf of the Government of litigation over orders of the Interstate Commerce Commission ought to be devolved upon one official department. It should either be vested in the Attorney General, as is the case with other litigation in which the United States is concerned, or it should be vested exclusively in the Interstate Commerce Commission. There were many objections to the old system under which the commission first acted in a quasi judicial capacity in deciding questions within the scope of its authority under the act, and then became a litigant in the courts to maintain the validity of its own proceedings. The anomaly of such a system led to the enactment of a provision in the amending law of 1910 (36 Stat., 539, 543) giving charge and control of the interests of the Government in such cases to the Attorney General. But a proviso in section 5 of that act authorized the Interstate Commerce Commission, and any party or parties interested in the proceeding before the commission to appear as parties to the suit of their own motion as of right, and to be represented by their counsel.

While the Department of Justice and the Interstate Commerce Commission have thus far been able to avoid any differences in policy in conducting litigation arising under the act, still it will readily be seen that such differences might well arise, and that the interests of the Government are not apt to be advanced where those charged with the representation of its interests in legal proceedings are in disagreement, and the power and responsibility of decision is not vested in any one.

APPROPRIATIONS AND ESTIMATES.

A detailed statement of the appropriations for this department for the fiscal year 1912 will be given in the appendix.

The grand total of all appropriations for the department and the United States courts for the year was $10,818,350.69, of which substantially one-half was for expenses of the courts of the United States.

The appropriations for the current year, including appropriations without year made by the last session of Congress, are $10,175,798.79, and the estimates submitted for the next fiscal year are $11,173,117, an increase of $997,318.21.

SUPREME COURT.

The following is a summary statement of the number and disposition of cases in the Supreme Court wherein the United States was a party in the fiscal years 1905 to 1908, inclusive, contrasted with those in the years 1909 to 1912, inclusive.

APPEALS BY THE UNITED STATES.

	1905	1906	1907	1908	Total.	1909	1910	1911	1912	Total.
Won	12	6	7	3	28	17	13	11	28	69
Lost	8	8	12	4	32	11	6	13	11	41
Split								1		1
Dismissed	7	3	1	3	14	9	4	18	2	33
Certioraris denied		2	2	4	8	11	6	9		26
Total	27	19	22	14	82	48	29	52	41	170

WHEREIN UNITED STATES WAS APPELLEE.

	1905	1906	1907	1908	Total.	1909	1910	1911	1912	Total.
Won	20	22	17	21	80	23	22	32	38	125
Lost	4	14	23	9	50	8	1	5	9	23
Split								1		1
Dismissed	6	20	8	17	51	20	12	10	13	55
Certioraris denied	8	15	12	14	49	14	8	22	37	81
Total	38	71	60	61	230	65	43	70	97	285

The following table shows the result of last year's work of the Supreme Court of the United States so far as the number of cases can show it. There was an increase of 61 in the number of cases docketed on the appellate docket, and an increase of 44 in the number disposed of. The number of cases remaining undisposed of was increased from 640 to 671.

	Appellate docket—October term.									
	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Cases at close of previous term not disposed of	344	306	282	280	305	343	421	478	586	640
Cases docketed at the term	385	425	400	488	476	471	487	503	509	530
Total	729	731	682	768	781	814	908	981	1,095	1,170
Cases disposed of at the term	423	449	402	463	438	393	430	395	455	499
Cases remaining undisposed of	306	282	280	305	343	421	478	586	640	671

A reference to the foregoing table shows a total of 1,095 cases on the appellate docket during the 1910 term. The number of cases pending was increased during the 1911 term to 1,170, showing an increase of 75 cases on the appellate docket.

At the close of the October term, 1910, there remained undisposed of on the appellate docket 640 cases and on the original docket 10 cases, making a total of 650. The number of cases docketed at the October term, 1911, was 532, of which 530 were on the appellate docket and 2 on the original docket. These, with the 650 cases remaining undisposed of, make the total number of cases pending at the last term, 1,182, of which 1,170 were on the appellate and 12 on the original docket. Of this number 502 were disposed of during the term, of which 499 were on the appellate and 3 on the original docket, leaving undisposed of at the close of the October term, 1911, 680 cases, 671 being on the appellate and 9 on the original docket.

The number of appellate cases actually considered by the court was 459, of which 261 were argued orally and 198 submitted on printed arguments. Of the 499 appellate cases disposed of 155 were affirmed, 83 reversed, 80 dismissed, 44 were settled by the parties and dismissed, in 7 questions certified were answered, 125 were denials of petitions for writs of certiorari under the act of March 3, 1891, and 5 were docketed and dismissed.

The total number of cases on the appellate docket in which the United States was a party or had a substantial interest disposed of at the October term, 1911, was 144, in 2 of which there were cross appeals. The United States was appellant in 41 of these cases and appellee, etc., in 97; was not a party to the record but had a substantial interest in 5, and 1 was a certification of questions.

Of the 41 cases appealed, etc., by the Government, 25 were decided in its favor and 9 adversely, 1 partly in favor of and partly adverse, 1 case was dismissed by it, 1 was dismissed by the court for want of jurisdiction, 1 was affirmed per stipulation, and in 3 the judgments were modified and affirmed.

Of the 97 cases in which the Government was appellee, etc., 36 were determined in its favor and 8 adversely, 1 partly in favor of and partly adverse to the Government, 1 was modified and affirmed, 4 were dismissed by the appellants, 8 were dismissed by the court, 1 was abated by death, in 1 error was confessed, and 37 were denials of petitions for writs of certiorari. In addition 5 cases (the Employers' Liability Cases), in which the Government was not a party but had a substantial interest, were decided in its favor, and 1 case was a certification of a question which was decided in favor of the United States.

Of the foregoing 144 cases 16 were appeals from the Court of Claims, 6 of which were taken by the Government and 10 by the other side. Of the 6 cases appealed by the Government 3 were decided in its favor, 2 adversely, and 1 was modified and affirmed; while of the 10 appealed by the other side 7 were decided in favor of the Government, 2 adversely, and 1 modified and affirmed.

Of the 144 cases referred to, 39 were criminal, of which 5 were capital, 11 being appealed by the Government under the Criminal Appeals Act, 27 were appealed, etc., by the defendants, and 1 was a certified question. Of the above 11 cases, 7 were decided in favor of the United States, 2 adversely, 1 was dismissed by the Government, and 1 docketed and dismissed; while of the 27 cases appealed, etc., by the defendants, 4 were decided in favor of the United States, 2 adversely, 3 dismissed by the court, 1 dismissed by the defendants, 1 was a confession of error, and in 16 petitions for certiorari were denied. The question certified was decided in favor of the Government.

Seven cases were appeals, etc., from the circuit courts of appeals, in 5 of which the Government was appellant and in 2 appellee. Of the 5 in which the United States was appellant, 1 was decided in its favor and 4 adversely; while of those in which it was appellee, 1 was decided in its favor and 1 was dismissed by the court.

In cases finally determined the United States was respondent in 37 petitions for writs of certiorari, which were denied. Of these, 3 were from the Court of Appeals of the District of Columbia and 2 from the Court of Customs Appeals.

There were 5 cases from Porto Rico, 5 from the Philippine Islands, 1 case from Hawaii, and 9 from the Commerce Court.

In 4 cases on the original docket motions for leave to file petitions were denied, and in 1 the petition was denied.

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DEFENDING SUITS AGAINST THE GOVERNMENT.

The following is a brief summary of the report of the Assistant Attorney General in charge of the defense of suits in the Court of Claims and suits against the Government prosecuted in the district and circuit courts of the United States:

* * * * * * *

GENERAL JURISDICTION CASES.

Cases disposed of during the year	150
Amount claimed	$66, 243, 846. 38
Judgments in favor of the United States, dismissing the petitions in 50 cases, claiming	$64, 256, 004. 45
Judgments in favor of the claimants in 100 cases, claiming	$1, 987, 841. 93
Amounts recovered in them	$618, 762. 29
Cases filed during the year	724
Amount claimed in them (approximately)	$13, 958, 730. 00
Cases now pending	3, 884

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CUSTOMS DIVISION.

The report of the Assistant Attorney General in charge of matters arising under the customs revenue laws may be summarized as follows:

The past year has served to dispose of all customs litigation in the circuit and district courts, circuit courts of appeal, and Supreme Court. It is now by law confined to the Board of General Appraisers and the Court of Customs Appeals.

Five cases were argued in the Supreme Court, three of which were decided in favor of the United States and two adversely.

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SOLICITOR OF THE TREASURY.

The report of the Solicitor of the Treasury shows that during the last fiscal year 2,519 civil suits were instituted for the recovery of a total of $7,241,474.75, and judgments were rendered in suits commenced during that period and prior thereto, including fines in criminal cases, amounting to $1,897,168.12. Collections in both civil and criminal cases aggregated $1,939,975.25.

In addition, claims not in suit, involving $1,045,935.59, were settled by compromise upon payment of $723,256.34, and judgments in internal-revenue cases were compromised upon payment of $6,879.82, making the total amount collected by both court proceedings and compromise $2,670,111.41.

The collections above reported do not include the sum of $78,958.74 collected through the office of the Commissioner of Internal Revenue. Including this amount the total collections from all sources aggregate $2,749,070.15.

During the year there were also deposited in the Treasury by clerks of courts unclaimed moneys in the court registries amounting to $91,820.98.

There were 152 written opinions rendered on questions of law submitted by the Secretary of the Treasury and 4,590 bonds and contracts examined as to their legal sufficiency, besides the heavy correspondence carried on with the United States attorneys, clerks of courts, and others, which it has been found impracticable to tabulate.

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INDIAN DEPREDATION CLAIMS.

A summary of the report of the Assistant Attorney General in charge of Indian depredation claims is as follows:

Total number of cases filed	10,841
Amount claimed	$43,515,867.06
Cases reduced to judgment	9,841
Amount claimed	$39,300,822.99
Cases reinstated since Nov. 1, 1911	24
Amount claimed	$199,248.00
Judgments for claimants from Nov. 1, 1911, to Nov. 1, 1912	56
Amount claimed	$140,794.00
Amount of judgments for claimants	$38,694.00
Judgments for defendants from Nov. 1, 1911, to Nov. 1, 1912	133
Amount claimed	$595,249.74
Number of cases now pending	1,000
Amount claimed	$4,215,044.07

The above statement shows that since the date of my last annual report 189 cases have been decided by the court, the total amount

claimed in such cases being $736,043.74. The claimants recovered judgments in 56 cases, the amount claimed being $140,794, and the amount awarded them being $38,694. In 133 cases the judgments were in favor of the defendants, the amount claimed in such cases being $595,249.74.

PARDONS.

The report of the attorney in charge of pardons shows the number of applications for clemency considered during the year, and the number of applications granted, denied, and pending to be as follows:

Cases pending July 1, 1911	92
Cases filed during the year ending June 30, 1912	399
Cases reopened, filed in prior years	13
Total number of cases for consideration	504
Applications granted:	
Unconditional pardons	20
Conditional pardon	1
Sentences commuted	76
Sentences commuted conditionally	2
Fines remitted	10
Fines remitted conditionally	8
Respites	2
Pardons, after sentence served, to restore civil rights	39
Pardons to restore rights of citizenship to deserters from the Army and Navy	47
Pardon to restore the right to become a citizen	1
	206
Applications denied by the President	55
Total number of cases considered by the President	261
Cases adversely reported by district attorneys and judges	150
Cases filed without action	23
Cases pending June 30, 1912, including those wherein reports have not been received or awaiting further information from other sources	70
Total number of cases disposed of or pending	504

PRISONS AND PRISONERS.

* * * * * * *

Modern humane treatment of prisoners seeks to deal with them in a kindly, helpful spirit, rather than to unnecessarily add to the severities of confinement. About a year ago I introduced at Atlanta the experiment of permitting prisoners to play baseball within the penitentiary inclosure once a week—on Saturday afternoons. This has been continued, and has proved, as the warden's report shows, one of the most effective methods of improving the morale of the prison which has thus far been discovered. A punishment which is most dreaded by offenders against prison rules, consists in depriving them of the privilege of attending these weekly games. All prisoners

not engaged in actual hard labor are subjected to a "setting-up" drill of an hour a day unless relieved by the physician's order. The beneficial results of this discipline are shown in the improved moral and physical condition of the prisoners. These experiments proved so successful at Atlanta that the same system has now been introduced at Leavenworth.

The necessity of relaying the floor of the dining room at Atlanta was availed of as an opportunity of introducing a new method of treating prisoners at meals. Instead of seating them at long tables and enforcing silence during meals, which had been the uniform prison discipline, tables seating eight were provided and the prisoners are allowed to converse during meals. The warden's reports show that the result has been a far more cheerful and improved spirit among the prisoners, and it is regarded as a marked step in humane treatment.

Schools have also been established in each of the penitentiaries for the purpose of giving daily instructions in reading and writing to illiterate prisoners, and rapid improvement is shown by the warden's report. I have endeavored to so organize the instruction that every illiterate prisoner shall be taught to read and write and the elements of arithmetic within two years. The wearing of stripes as a prison uniform has been abandoned. A number of other modifications in prison discipline are noted in the warden's reports.

PAROLES.

The administration of the parole law has also been attended with excellent results. Out of 191 prisoners paroled during the year only 2 have violated the conditions of their parole. I again urge upon Congress the passage of the bill extending the benefits of the parole law to life-term prisoners who shall have served at least 15 years of actual confinement. This bill was passed by the House of Representatives and has been favorably reported by the Judiciary Committee of the Senate. Its passage was recommended by the unanimous vote of the board of wardens of penitentiaries, embracing some 37 wardens of the leading penitentiaries, and by the American Prison Congress at its last annual meeting, held in Baltimore, Md., during the current month. A considerable number of applications for executive clemency on behalf of this class of offenders are being held in the hope that the Senate may pass this bill and the cases dealt with under the parole law.

UNITED STATES PRISONERS.

The number of United States prisoners in confinement in the United States penitentiaries at Atlanta, Ga., Leavenworth, Kans., and McNeil Island, Wash., the Government Hospital for the Insane, the National Training School for Boys, and in State institutions other than county jails on June 30, 1912, was 2,751, as compared with 2,547 on June 30, 1911, an increase of 204.

Of the 2,751 in confinement on June 30, 1912, 2,340 were confined in the United States peniteniaries at Atlanta, Ga., Leavenworth, Kans., and McNeil Island, Wash., and of the 61 confined in State penitentiaries, 46 were confined in institutions which receive prisoners for terms of less than one year; 83 were confined in the National Training School for Boys, at Washington, D. C.; and 140 in State reformatories and houses of correction. There were 127 prisoners transferred for treatment to and confined in the Government Hospital for the Insane.

The following table shows the number of prisoners received in the United States penitentiaries, in State penitentiaries, the National Training School for Boys, and State institutions for juveniles, houses of correction, etc., for the fiscal year ending June 30, 1912, with other statistics relating thereto:

	United States institutions.	State penitentiaries.	National Training School for Boys, District of Columbia.	State reformatories and houses of correction.	Total.
In prison July 1, 1911	2,193	122	103	128	2,546
Received from July 1, 1911, to June 30, 1912	1,280	47	29	249	1,605
Total in prison during the year	3,473	169	132	377	4,151
Discharged from July 1, 1911, to June 30, 1912	1,006	108	49	237	1,400
Remaining in prison June 30, 1912	2,467	61	83	140	2,751
Released:					
By expiration of sentence	726	78	38	215	1,057
Paroled	178	10	7	3	198
Died	26	1	----	1	28
Pardoned or commuted	38	2	----	----	40
Transferred to United States penitentiaries, State institutions, and insane asylum	29	16	----	8	53
By habeas corpus or order of court	6	1	----	5	12
Escapes	3	----	4	5	12
Received during the year ending June 30, 1912:					
Violations of parole	6	1	----	----	7
Violations of revenue laws	168	----	3	67	238
Counterfeiting, etc	113	2	2	5	122
Violations of postal laws	361	7	14	55	437
Violations of pension laws	3	----	----	----	3
Violations Indian-country liquor laws	92	2	----	36	130
Larceny	34	5	----	4	43
Murder or manslaughter	32	2	----	1	35
Robbery, burglary, and housebreaking	115	10	----	2	127
Assault with intent or with a dangerous weapon	40	1	----	3	44
Violations national banking laws	20	----	----	4	24
Violations white-slave laws	88	11	----	14	113
Offenses other than those named	208	6	10	58	282
Nativity—					
Born in the United States	1,081	42	29	163	1,265
Foreign born	249	5	----	86	340

	United States institutions.	State penitentiaries.	National Training School for Boys, District of Columbia.	State reformatories and houses of correction.	Total.
Received during the year ending June 30,1912—Con.					
Sex—					
Male	1,277	15	29	241	1,562
Female	3	32	----------	8	43
Habit of life—					
Claim to be temperate	551	27	20	178	776
Admit themselves to be intemperate	729	20	9	71	829
Color—					
White	939	29	15	196	1,179
Colored	271	17	14	46	348
Indians and others	70	1	----------	7	78
Education—					
Could read and write	1,063	42	15	238	1,358
Could read only	11	----------	3	----------	14
Could neither read nor write	206	5	11	11	233
Social relations—					
Married	617	31	----------	128	776
Single	663	16	29	121	829
Previous convictions—					
In prison for first time	857	36	29	240	1,162
Heretofore served imprisonment	423	11	----------	9	443
Age when admitted—					
Under 20 years of age	76	3	29	39	147
Between 20 and 30 years of age	508	19	----------	76	603
Between 30 and 40 years of age	366	14	----------	63	443
Between 40 and 50 years of age	202	8	----------	41	251
Over 50 years of age	128	3	----------	30	161
Of those in prison June 30, 1912:					
Idle	127	1	----------	122	350
Disabled or sick	115	3	----------	1	119
On piece-price plan	----------	2	----------	----------	2
On State account	----------	9	----------	33	42
On prison duties	2,003	46	----------	189	2,238
Total working	2,003	57	----------	222	2,282

UNITED STATES PENITENTIARY, LEAVENWORTH, KANS.

The number of prisoners in confinement June 30, 1912, was 1,165, the average daily population being 1,083; the average daily population for 1911 was 1,047.

The cost of maintenance of the penitentiary during the year was $231,961.71; the average yearly cost of maintenance per man was $214.06; the daily cost $0.585; the cost for subsistence alone was $0.13. The cost per man per day for maintenance in 1911 was $0.559, and the cost for subsistence alone was $0.116.

The increased cost over last year is accounted for largely through the severe drouth at the beginning of the year, which materially reduced the yield of farm products, especially potatoes, which it became necessary to purchase at the highest prices ever known in that locality, and to the severe winter through which that locality passed, said to have been the coldest known to the memory of the oldest inhabitant, which added $2,500 to the institution's coal bill.

During the year the prisoners were employed in continuing the erection of prison buildings, in the cultivation of prison farms, and the usual prison duties. The average daily number of men employed upon construction work was 359.

The value of the farm supplies raised during the year and used by the penitentiary was $13,989.67. The value of the farm supplies consumed by the institution during the last fiscal year was $16,508.23.

During the year there were 8 deaths, a decrease of 3 as compared with last year.

UNITED STATES PENITENTIARY, ATLANTA, GA.

The number of prisoners in confinement on June 30, 1912, was 954, the average daily population being 833. The average daily population for the fiscal year 1911 was 767.

The cost of maintenance of the penitentiary was $171,211.11; the average yearly cost of maintenance per man was $205.54; the daily cost, $0.562. The daily cost per prisoner for subsistence alone was $0.111. The average yearly cost of maintenace per man for 1911 was $211.44; the daily cost, $0.579; while the daily cost for subsistence alone was $0.108.

During the year the prisoners were employed in connection with the erection of prison buildings, the cultivation of the prison farm, and the usual prison duties. The number of days' labor performed on construction work by prisoners was 51,946.

The value of farm supplies raised and used by the penitentiary during the year was $9,541.37.

During the year there was 10 deaths, an increase of 4 over the preceding year.

UNITED STATES PENITENTIARY, M'NEIL ISLAND, WASH.

The number of prisoners in confinement on June 30, 1912, was 221, the average daily number for the year being 170. The average daily population for the fiscal year 1911 was 135.7.

There was expended during the year for the maintenance of the penitentiary $46,312.88. The average yearly cost of maintenance per prisoner was $247.57; the daily cost, $0.678. The daily cost for subsistence alone per prisoner was $0.112, while the daily cost for the year 1911 was $0.1198.

During the year the prisoners were employed in connection with the erection of prison buildings, excavating and filling, cultivating of farm, boat building, and the usual prison duties. There were three deaths during the year among the prisoners, which is the same number as last year.

An inclosing wall is badly needed at this institution to prevent escapes and to avoid the expense of removing to other Federal penitentiaries prisoners of the more desperate class, whom it would be unsafe to confine at the McNeil Island Penitentiary in the absence of a wall. In the absence of a wall the prison is exposed to attack

from the outside, and this is a constant source of real danger, when it is considered that the entire force of guards, both day and night guards, numbers but 12.

CRIMINAL IDENTIFICATION RECORDS.

During the fiscal year ended June 30, 1912, 3,257 Bertillon photograph and criminal record cards and 10,380 finger prints were received. There are at present on file in this office 33,196 Bertillon photographs and records, 39,914 finger-print records, and 60,700 criminal index cards. During the year 1,377 identifications were made.

NEEDED PROVISION FOR UNITED STATES FEMALE PRISONERS.

The department is confronted with practically the same conditions with regard to female prisoners of the penitentiary class as exist with regard to prisoners of the reformatory class, in that none of the State institutions are willing to receive the female prisoners. The number of female prisoners is increasing very rapidly, due largely to the prosecutions under the white-slave law. Practically all of these prisoners are now confined in the Kansas State penitentiary at Lansing, Kans., under an arrangement made several years ago with the warden of that institution, whereby he agreed to receive a limited number of such prisoners and to keep them for a limited time. That institution has already served notice on the department to take away these prisoners, but temporary arrangements have been effected whereby the institution will continue to receive the female prisoners for a limited time at an increased rate of payment, provided they are not afflicted with tuberculosis or insanity. There are now in the Government Hospital for the Insane at Washington two female prisoners who have been certified by the superintendent of the institution to be restored to their normal mental condition and who should be removed to a penitentiary to serve out the remainder of their terms, and there is also a female prisoner in the United States jail in the District of Columbia whose sentence to be hanged was recently commuted by the President to life imprisonment and who should be taken to a penitentiary to serve her sentence, but none of these prisoners can be taken to the Lansing institution, because the authorities refuse to receive the first two mentioned on account of their having been insane, and they refuse to receive the one last mentioned because she is afflicted with tuberculosis.

Several years ago preliminary plans were prepared providing for the erection of a wing for female prisoners at the United States penitentiary, Leavenworth, Kans., but the work was discontinued on account of lack of funds. An appropriation of $55,000 is needed to complete this wing, and the amount should be provided without

delay, so that the department can proceed with the work of providing quarters for its female prisoners, the number of which is constantly increasing.

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SUPREME COURT.

ABSTRACTS OF DECISIONS AT OCTOBER, 1911, TERM.

The following are abstracts of the most important cases not hereinbefore noted, in which the United States was a party, decided at the October term, 1911.

Interstate Commerce Commission v. Diffenbaugh; Interstate Commerce Commission v. F. H. Peavey & Company; Union Pacific Railroad Company v. Same. (222 U. S., 42.)

These are known as the "Grain Elevator Cases." They involved the legality of certain orders of the Interstate Commerce Commission prohibiting the payment by common carriers of allowances to owners and lessees of grain elevators at points on the Missouri River for the elevation of grain shipped from points west of the river and destined to points beyond. The purpose of the order in each of the cases was the same, namely, to remove what the commission thought constituted an undue preference and unjust discrimination, in violation of the Hepburn Act, resulting from the payment by the carriers of allowances at the points mentioned and their refusal to pay similar allowances or any allowances whatever at other points. In the Peavey case Peavey & Co. contracted with the Union Pacific Railroad Co., which has its eastern termini at Missouri River points, for the elevation of the grain transported by the latter at 1¼ cents per 100 pounds, which charge the commission finally reduced to three-fourths of a cent per 100 pounds, regarding that as reasonable compensation for the services performed. The commission, however, prohibited all compensation for the elevation by Peavey & Co. of the grain owned by it or in which it had any interest if at the time of such elevation it also cleaned, clipped, and mixed the grain, upon the theory that these were commercial advantages not enjoyed by owners and shippers of grain not similarly situated, and thus constituted an unjust discrimination as against the latter. The order in the Diffenbaugh case, which was directed against certain railroad companies operating through lines, and which had made the same allowance for elevation as the Union Pacific Co., in order to meet the latter's competition, also forbade any payment whatever for such service. The lower court was of the opinion that the "elevation" of the grain was a part of the "transportation," which the law required the

carriers to provide or to pay reasonable compensation therefor; that the treatment of the grain in the elevators (cleaning, etc.) was a trade service, over which the commission had no power; and that the commission therefore exceeded its power in the promulgation of the orders referred to. This decision, somewhat modified as to the proper allowance to Peavey & Co. under its contract, was sustained by the Supreme Court.

Curtin v. Benson. (222 U. S., 78.)

This case involved the validity of certain rules established by the Secretary of the Interior in regard to grazing cattle on private lands within the limits of Yosemite National Park. In order to reach their property and graze cattle thereon many landowners in the park are obliged to cross the Government park lands. The Interior Department promulgated rules authorizing the taking of stock over these lands, but provided that it must be done "with the written permission and under the supervision of the superintendent" of the park. Because of appellant's refusal to comply with this rule and his insistence upon driving his cattle over the land without such permission, the superintendent removed the cattle from his property and prevented its use until the rule should be complied with. This, the Supreme Court declared, was a destruction of essential uses to private property; that to take an essential use of property was to take property itself; and that therefore the rules were such as were beyond the power of the Secretary to promulgate.

Bryan, collector of the port of Charleston, v. Ker, executrix. (222 U. S., 107.)

The Supreme Court here held that although a writ which a court has power to issue in a proper case may have been irregularly issued, an officer is authorized and bound to act thereunder if it comes into his hands as an apparently valid writ, the irregularity rendering the writ not void but voidable merely.

Crozier v. Fried. Krupp Aktiengesellschaft. (224 U. S., 290.)

This was a suit by respondent to enjoin the manufacture by Gen. Crozier, chief ordnance officer of the United States, of guns and gun carriages, alleging infringement of certain letters patent. The Supreme Court held that the action could not be maintained, the proper remedy being a suit in the Court of Claims for compensation.

Ker & Company v. Cowden. (223 U. S., 268.)

This was an action to recover possession of a tract of land which was gradually formed by the action of the sea and is now part of the United States navy yard at Cavite, P. I., defendant in error

being the naval officer (commandant) in charge. Prior to the acquisition by the United States of the Philippines, the land in controversy formed part of the Spanish navy yard. Ker & Co. claimed title under conveyances from the owner of the upland. The Supreme Court, affirming the judgment of the Philippine courts, declared the title in the United States, basing its decision chiefly upon the considerations that according to the Spanish law of waters of 1866, effective in the Philippines in 1871, such accretions belonged to the public domain unless and until the Government should decide they were no longer needed for public utilities; that the doctrine that such accretions belonged to the public domain had been adopted by the leading civil law countries, including France, Italy, and Spain; and that the case was governed by the law of the Philippines, not that which prevails in this country.

United States v. Citroen. (223 U. S., 407.)

The correctness of the ruling of the Circuit Court of Appeals for the Second Circuit that imported pearls capable of being strung as a necklace, or intended for that purpose, are dutiable under paragraph 436 of the tariff act of 1897 at 10 per cent ad valorem, as pearls "in their natural state, not strung or set," and not at 60 per cent under paragraph 434, as urged by the Government, was the issue in this case and was sustained by the Supreme Court.

Hussey, administratrix of Crane, v. United States. (222 U. S., 88.)

In this case the Supreme Court held that one claiming an interest in property is bound to consider at the time such property is sold by trustees whether he will assert his title to the property or accept a share of the proceeds; and that acceptance of such proceeds and failure to make timely disavowal of the sale may amount to ratification.

The "Abby Dodge." (223 U. S., 166.)

The constitutionality of the act of June 20, 1906, regulating the landing, etc., of sponges at ports of the United States, was sustained by the Supreme Court. Claimant's main contention against the validity of the act was its alleged repugnancy to the Constitution, in that it applied to sponges taken in local waters and therefore dealt with a matter exclusively within State jurisdiction. The Supreme Court held that while the statute could be given the construction contended for by claimant it was also susceptible of being confined to sponges taken *outside* of local waters, and should be so construed, following the rule that where two interpretations of a statute are admissible, one of which makes the statute constitutional and the other unconstitutional, the former must be adopted. How-

ever, as the libel failed to allege that the acts were done outside of the territorial limits of the State, the decree of the lower court in favor of the Government was reversed, with permission under the circumstances to amend the libel to present a case within the statute.

Tang Tun v. Edsell, Chinese Inspector. (223 U. S., 673.)

The right of petitioners, Chinese, to be admitted into the United States and the legality of the inquiry to determine whether they were entitled to entry were here involved. The immigration officer found against petitioners on the first proposition, which decision the Supreme Court upheld. The court also held with the Government on the second proposition, and decided that the requirements of the law in the case had been satisfied, and there was no ground for judicial intervention.

United States v. Eckstein. (222 U. S., 130.)

This case involved the correct classification under the tariff act of 1897 of artificial or imitation horsehair. The Supreme Court, affirming the judgment of the Circuit Court of Appeals for the Second Circuit, declared the merchandise properly classified under the so-called "similitude clause" of section 7 of the act, with cotton yarn, and not with silk yarn, as urged by the Government. It was also decided that a substantial similarity in any one of the four particulars mentioned in the similitude clause is adequate to classify an article thereunder.

United States ex rel. Turner v. Fisher, Secretary of the Interior. (222 U. S., 204.)

Whether relators were entitled to the writ of mandamus to compel the restoration of their names to the rolls of membership of the Creek Nation, from which they had been stricken by the Secretary of the Interior without proper notice, was the issue in this case. The Supreme Court, affirming the decision of the Court of Appeals, decided against relators, because, instead of replying to the Secretary's answer alleging fraud in procuring the enrollment, they elected to stand upon their demurrer—an admission of the fraud.

United States v. Congress Construction Co. (222 U. S., 199.)

Here it was held by the Supreme Court that under the so-called material men act of 1894, as amended, an action on a bond for labor and materials furnished must be brought in the district in which the contract was to be performed, regardless of the residence of the principal and the sureties, the court having ample authority to obtain jurisdiction of the persons of the defendants through the service of its process upon them in whatever district they may be found.

United States ex rel. Turner v. Fisher, Secretary of the Interior. (222 U. S., 683.)

This was a case in which the Supreme Court affirmed the judgment of the Court of Appeals of the District of Columbia holding that a decision of an executive officer of the Government, made in the discharge of a duty imposed by law and involving the exercise of judgment and discretion, can not be reviewed by mandamus.

Philadelphia Company v. Stimson, Secretary of War. (223 U. S., 605.)

Appellant, a Pennsylvania corporation, was the owner in fee of Brunot's Island, in the Ohio River near Pittsburgh. In 1895 the Secretary of War, acting in the interest of navigation and under authority conferred by Congress, established harbor lines for Pittsburgh Harbor. These lines followed closely the actual high-water mark, and fell, for the most part, *within* the limits of the ordinary high and low water lines previously fixed (in 1865) by a Pennsylvania State commission. Subsequent to the fixing of the lines by the State authorities and prior to the establishment of those by the War Department, a considerable portion of the shore of the island inside the high-water line, as determined by the former, was washed away from time to time by heavy floods and freshets, shifting the line inward upon the island. Appellant claimed ownership, and therefore the right of reclamation, to the line established by the State, insisting upon that as the permanent boundary, and attacking the establishment of the Federal Government line as an unlawful taking of its property for public use without compensation. The Supreme Court, in harmony with the position taken by the Government, decided that the changes in the line were due to gradual erosion, and not to avulsion, and that in accordance with the well-settled rule in such cases, the river constituted the boundary, to the shores of which only appellant was entitled to hold. The court also pointed out the paramount power of Congress over navigation and the right of the Secretary of War under authority of Congress to fix harbor lines superseding those fixed by a State.

Wood v. United States. (224 U. S., 132.)

This was an appeal involving a claim by Wood, a naval officer serving as aid to the Admiral, for additional compensation during the period of such service. The Court of Claims disallowed the claim upon the ground that the statute upon which it was based had been repealed; and its decision was affirmed by the Supreme Court.

Huse v. United States. (222 U. S., 496.)

Appellant had a four-year contract with the Post Office Department for carrying the mails between the post office and railway mail

stations at Omaha, Nebr., but because of his repeated failures in the performance of the contract it was canceled. Thereupon suit was brought for the balance due and for damages, but the Court of Claims decided that as the contract had been properly canceled, and as the Government had sustained damages in excess of the amount due, appellant was not entitled to recover. This, too, was the view entertained by the Supreme Court.

United States v. Ellicott. (223 U. S., 524.)

The question for decision here was as to the liability of the United States in damages because of its refusal to permit the carrying out of an alleged contract made with appellees, through the Isthmian Canal Commission, for the construction of six steel dump barges. The abrogation of the contract was based upon appellees' failure to adhere to the original specifications in so far as they related to dimensions of materials, the contract as finally entered into containing terms so greatly at variance with the specifications as advertised as to make it an impossibility to construct a barge of the weight designated unless through the use of materials reduced in weight, size, and power of resistance. Because of this irreconcilable conflict the Supreme Court declared the contract void for uncertainty, and therefore unenforceable.

Herrera v. United States. (222 U. S., 558.)

The right of appellants to recover the value of the use and profits of which they claimed they were deprived by the alleged unlawful seizure and detention by the United States of the steamer *San Juan* during the War with Spain, immediately following the surrender of Santiago, Cuba, was the issue here. The decision of the Court of Claims, where the suit was instituted, was against appellants on the ground that the vessel at the time of its seizure was still enemy property, and that such seizure therefore constituted an act of war. This was also the opinion of the Supreme Court.

Diaz v. United States. (222 U. S., 574.)

The question in this case was the same as that in Herrera *v.* United States, with which it was argued and submitted, and the decision in which was followed.

United States v. McMullen et al., Administrators. (222 U. S., 460.)

This case presented for decision the liability of defendants in error as sureties upon a bond given to secure the performance of a contract for dredging the channel of the Beaufort River at Port Royal, S. C. After the work was about one-half completed, the contractor, the New York Dredging Co., abandoned it, whereupon the Navy De-

partment canceled the contract and the work was finished under contract with a third party at an increased cost; and it is for this increase in cost that suit was brought. Liability on the part of the sureties was denied chiefly upon the ground that the dredging company had been granted extensions of time, without their consent, within which to complete the contract, and they were thereby discharged. As the specifications, however, which were a part of the contract, provided for an extension of time, of which the sureties had knowledge, it was held that the sureties were not relieved by such extensions. Other points made by defendants in error denying liability were all decided against them.

Fairbanks v. United States; Warren v. United States. (223 U. S., 215.)

These were actions brought by appellants, Chippewa Indians, to determine their rights to two 80-acre allotments of land in the White Earth Indian Reservation, Minn., under the Chippewa treaty of 1867, and various allotment acts relating thereto. Appellants, who had been given original allotments of 80 acres each under the so-called Nelson Act of 1889, made application for 80 acres *additional* under the Steenerson Act of 1904, an act amending and superseding, in part, prior legislation upon the same subject, and enlarging the quantity of land to be allotted each Chippewa Indian to 160 acres. Application was also made, subsequent to the passage of the act of 1904, by two other Chippewas for these identical 80 acres, as original allotments, however, under the act of 1889. The lands were eventually allotted to the latter; and this action the Supreme Court sustained, the court holding that the Nelson Act was still effective as to such Indians who had not received *any* allotments at the time of the passage of the Steenerson Act, and that those who had received allotments were therefore not entitled to make selections of *additional* lands under the Steenerson Act to the exclusion of those who had not received *any* allotments under the Nelson Act.

Southern Pacific Railroad Company v. United States. (223 U. S., 560.)

This case presented the right of appellant, the Southern Pacific Railroad Co., under the indemnity provisions of its so-called branch line grant of 1871, to select, in lieu of lands lost within the place limits of the grant, lands which were subject to the provisions of the grant made to the Atlantic & Pacific Railroad Co. in 1866, but which, by the act of 1886, were forfeited to the United States. The grants mentioned were made to aid in the construction of railroad lines, and the controversy arose through the overlapping of the limits of the grants at the intersection of the two lines. The Supreme Court decided against appellant, following Southern Pacific Railroad Company *v.* United States (168 U. S., 1), in which it was held that

in view of the conditions attached to the grant and of the reservations of power in Congress contained in the act of 1866, such lands became, upon the forfeiture act of 1886, the property of the United States, in which the Southern Pacific Co. had acquired no interest affecting the Government's ownership.

United States v. Southern Pacific Railroad Company; Southern Pacific Railroad Company v. United States. (223 U. S., 565.)

As in the case immediately preceding, there was here involved the title to lands selected by the Southern Pacific Railroad Co. as lieu or indemnity lands because of a deficiency within the place limits of its grant. The Supreme Court decided the cases in favor of the Southern Pacific Co., distinguishing them from the preceding case and that in 168 U. S., 1, in that the grants in the present cases were made by one and the same act, entitling each company to take an equal undivided moiety of the lands within the conflicting limits.

Latimer v. United States. (223 U. S., 501.)

That scrap tobacco, consisting of tobacco sweepings, is properly classifiable under the tariff act of 1897 as "unmanufactured tobacco," dutiable at 55 cents per pound and not at 10 per cent ad valorem, was the decision of the Supreme Court in this case.

Powers v. United States. (223 U. S., 303.)

Plaintiff in error was convicted under an indictment charging him with violating certain sections of the Revised Statutes relating to the distillation of spirituous liquors. While numerous errors were assigned in the Supreme Court, all of which were decided against Powers, the chief objection concerned the admission at the trial of the testimony of Powers given before a United States commissioner at a preliminary hearing. This, it was claimed, worked a violation of his rights under the Fifth Amendment to the Constitution protecting him against self-incrimination. As the record showed that the testimony was entirely voluntary and understandingly given, the Supreme Court held it was properly admitted in evidence.

Campbell v. United States. (224 U. S., 99.)

This was an action at law, brought in the District Court of the United States for the District of Colorado against the sureties on an official bond of a receiver of public moneys, to recover for a default of their principal, in which the Supreme Court sustained a judgment in favor of the defendants and overruled the Circuit Court of Appeals upon the ground that the latter was without jurisdiction to review the case.

Hendricks v. United States. (223 U. S., 178.)

This was a writ of error to review a conviction and sentence for subornation of perjury based upon the ground that the indictment did not sufficiently set forth the nature and cause of the accusation within the meaning of the Sixth Amendment. This contention was regarded by the Supreme Court as manifestly frivolous, and it dismissed the writ.

Plummer v. United States. (224 U. S., 137.)

Held, that an acting assistant surgeon in the Navy is entitled to the same rate of pay and allowances under the Navy Personnel Act of 1899 as an assistant surgeon.

United States v. Baruch. (223 U. S., 191.)

This was a writ of certiorari to the United States Circuit Court of Appeals for the Second Circuit and involved the classification under the tariff act of 1897 of cotton featherstitch braids. The Supreme Court declared the goods assessable as "braids," at 60 per cent, the duty imposed by the collector and contended for by the Government, and not as "notions" or "bindings," at 45 per cent, the classification urged by respondents.

Brown v. Elliott, United States Marshal in and for the Northern District of California, et al.; Moore v. Elliott, United States Marshal in and for the Northern District of California. (225 U. S., 392.)

These were conspiracy cases under section 5440, Revised Statutes, in which the Supreme Court followed Hyde *v.* United States (225 U. S., 347), to the effect that the conspirators may be tried in the State or district where an overt act is committed. In the present cases, however, the indictment alleged that the exact place and district of the conspiracy were unknown to the grand jurors. But the Supreme Court held that if the indictment sufficiently charged the commission of overt acts within the district, as had been done here, it was sufficient, even though it stated that the place where the conspiracy was formed was unknown.

B. Altman & Co. v. United States. (224 U. S., 583.)

This case involved the proper classification for tariff purposes of a bronze bust imported from France. The bust was assessed at 45 per cent ad valorem under that paragraph of the tariff act of 1897 covering "articles or wares not specially provided for in the act." Appellants, protesting, insisted upon classing the bust as "statuary," under a commercial reciprocal agreement entered into by the United States under authority of the same act, dutiable at 15 per cent. The

Supreme Court sustained the Government's classification. Another question in the case was whether the agreement referred to was a "treaty" within the meaning of section 5 of the Circuit Court of Appeals Act permitting a direct appeal from a circuit court to the Supreme Court in any case, among others, in which the validity or construction of any treaty is drawn in question. The Supreme Court held it was.

The United States v. Société Anonyme des Anciens Etablissements Cail; Société Anonyme des Anciens Etablissements Cail v. United States. (224 U. S., 309.)

This was a suit for royalties claimed to be due for the use by the Government of a patented invention known as a "gas check," or "obturator," a device applied to breech-loading cannon to prevent the escape of gas. The Court of Claims found that there had been an infringement of the patent and rendered judgment against the Government, and this was affirmed by the Supreme Court.

United States v. Colorado Anthracite Co. (225 U. S., 219.)

The Supreme Court in this case affirmed the judgment of the Court of Claims sustaining the validity of an entry for coal lands under the coal-land laws and permitting the appellee company to recover the purchase price paid to the United States for the land, because of the subsequent cancellation of the entry. The question in the case was whether the company was an "assign" within the meaning of the act authorizing repayment of the purchase price in certain instances "to the person who made such entry, or to his heirs or 'assigns,'" the entry having been made by another party for the benefit of the company, with funds furnished by the latter, and the land subsequently conveyed to it. The Supreme Court held that the company was an "assign," and therefore entitled to recover.

Johannessen v. United States. (225 U. S., 227.)

The constitutionality of the provision of the naturalization act of June 29, 1906 (34 Stat., 596), authorizing the institution of proceedings by the Government for the cancellation of certificates of citizenship if found to have been fraudulently or illegally procured, was in issue in this case and was upheld by the Supreme Court. The chief objections urged to the constitutional validity of the legislation were (1) an exercise of judicial power by the legislative branch of the Government, because the act authorized the impeachment of a pre-existing judgment, and (2) unconstitutionality as an ex post facto law, because retrospective. As to the first proposition, the Supreme Court pointed out that the certificate here involved had been procured ex parte, the Government not having been a party to the pro-

ceeding, and, like other public grants, could be revoked if found to have been obtained unlawfully; and to the second point answered that the ex post facto provision is confined to laws respecting criminal punishment, and has no relation to any other retrospective legislation.

Eastern Cherokees v. United States. (225 U. S., 572.)

This was a supplemental petition filed in the Court of Claims by the Eastern Cherokees, challenging the ruling of that court, subsequently affirmed by the Supreme Court, in the matter of the recovery of certain claims against the United States arising under treaty obligations with the Cherokee Indians—whether the recovery was in the name of the rightful claimant. The right of the attorneys to receive any fees or compensation out of the moneys so recovered, was also attacked. The Supreme Court held that the Court of Claims having passed upon the questions, and its judgment having been affirmed, the matters had been adjudicated, and that the Court of Claims must give effect to the judgment so affirmed, according to the mandate of the Supreme Court.

Clairmont v. United States. (225 U. S., 551.)

Whether a railroad company's "right of way" through an Indian reservation, the Indian title to which strip of land covered by the "right of way" has been extinguished and the land freed from the right of Indian occupancy by virtue of an agreement between the United States and the Indians, is "Indian country" within the meaning of the Federal liquor statute, forbidding the introduction of liquor into such country, was the question presented for decision in this case and was decided by the Supreme Court in the negative—against the Government.

United States v. Fidelity Trust Company. (222 U. S., 158.)

This was a suit in the Court of Claims for the recovery of inheritance taxes collected by the United States under the war revenue act of June 13, 1898 (30 Stat., 448). Appellee was the residuary legatee under a will, to hold the fund in trust, etc., and to pay over the net income to the testator's niece, in quarterly payments. The claim was based upon the refunding act of June 27, 1902, which directs the refund of taxes collected on "contingent beneficial interests," which shall not have become vested prior to July 1, 1902. The Government insisted that the legacy was a vested life estate and not a "contingent beneficial interest," and therefore did not come within the purview of the refunding act; and the Supreme Court so held.

United States v. Garbish. (222 U. S., 257.)

The sole question in this case was whether the usual work of constructing levees upon the Mississippi River constitutes an "extraordinary emergency" within the meaning of the Federal eight-hour law of August 1, 1892, which restricts the employment of all laborers and mechanics upon any of the public works of the Government to eight hours a day, *except in case of extraordinary emergency.* The Supreme Court decided the question in the negative.

Diaz v. United States. (223 U. S., 442.)

Here the Supreme Court affirmed the judgment of the Supreme Court of the Philippine Islands sustaining a judgment of conviction of homicide, not capital, the validity of which was the question involved in the case. Diaz was convicted before a justice of the peace of assault and battery. Shortly thereafter the person assaulted died as a result of the injuries, whereupon Diaz was tried and convicted in the court of first instance of homicide. In the Supreme Court of the United States it was objected that the conviction was invalid because (1) of former jeopardy, (2) denial of the right to be confronted with the witnesses against him, in that the judgment was in part rested upon the proceedings before the justice of the peace, and (3) denial of the right to be present and heard at every stage of the trial, in violation of the provisions contained in the Philippine act of July 1, 1902 (32 Stat., 691). All of these the Supreme Court overruled, the first, because the offenses were not the same; the second, upon the ground that the record of the proceedings referred to was put in evidence by the accused himself, was offered without qualification or restriction, and was therefore properly admitted; and the third, for the reason that Diaz voluntarily absented himself, which, the court held, operated as a waiver of his right to be present.

United States v. Plyler. (222 U. S., 15.)

Held, that the forgery of vouchers required upon examination by the Civil Service Commission, certifying to the character, fitness, etc., of an applicant, constitutes a fraud against the United States within the contemplation of section 5418 of the Revised Statutes, and that it is not essential to charge or prove an actual financial or property loss to make a case under the statute.

United States ex rel. Lowe v. Fisher, Secretary of the Interior. (223 U. S., 95.)

The main question presented for decision here, which was sustained by the Supreme Court, was the legality of the action of the Secretary of the Interior in striking the names of relators—descend-

ants of Cherokee freedmen—from the roll of Cherokee citizens and excluding them from participation in the distribution of the tribal property of the Cherokee Nation. The Secretary's action was taken, after due notice and an opportunity to be heard, because the enrollment was improper and illegal, in that the freedmen, after leaving the Cherokee country, failed to return within the time prescribed by the treaty granting to former slaves the rights of native Cherokees.

Hyde & Schneider v. United States. (225 U. S., 347.)

Important principles of law relating to the crime of conspiracy as defined by section 5440, Revised Statutes, were presented by this case. Petitioners were indicted, tried, and convicted in the District of Columbia for conspiring to defraud the United States out of the possession of and title to large tracts of public lands in California and Oregon. The jurisdiction of the trial court was challenged upon the ground that the conspiracy was originally formed in California while the indictment alleged its formation and the commission of overt acts in pursuance thereof in the District of Columbia. The important question, therefore, as to the venue in conspiracy cases was involved, whether it *must* be at the place where the conspiracy is entered into or whether it *may* be at the place where the overt act is performed, the Sixth Amendment to the Constitution requiring all criminal prosecutions to be in the "district wherein the crime shall have been committed." The Supreme Court held that although at common law the gist of the offense was the conspiracy itself, and the crime was complete without any overt act, under section 5440 an overt act to effect the object of the conspiracy was necessary, such overt act constituting the execution of the conspiracy, and that a prosecution could be had either where the conspiracy was entered into—the beginning of the offense—or where the overt act was performed—the execution or completion of the offense. The court also held that overt acts performed in one district by one of the parties who had conspired in another district gave jurisdiction to the court in the district where the overt acts were performed as to all the conspirators. Other questions involved and the ruling of the court are shown by the syllabus,[1] which is as follows:

> In this case the defendant applied for a writ of certiorari and the Attorney General assented to granting it on the ground that the determination of the case depends upon the principles of law governing conspiracy and it is of vital importance to the United States, as well as its citizens, to have those principles settled by this court.
>
> While under the ancient rule of conspiracy the gist was the conspiracy itself and the crime was complete without any overt

[1] Syllabus copyrighted by Banks Law Pub. Co.

act, § 5440, Rev. Stat., prescribes as necessary to constitute an offense under it not only the unlawful conspiracy but also an overt act to effect the object by at least one of the conspirators.

Quære as to the extent of agency between persons conspiring in violation of § 5440, Rev. Stat.

There may be a constructive presence in a State, distinct from personal presence, by which a crime committed in another State may be consummated, and render the person consummating it punishable at that place.

In construing criminal laws, courts must not be in too great solicitude for the criminal to give him immunity because of the difficulty in convicting or detecting him.

In determining the place of trial there is no oppression in taking the conspirators to the place where the overt act was performed rather than compelling the victims and witnesses to go to the place where the conspiracy was formed.

The size of our country has not become too great for the effective administration of criminal justice.

Where a continuing offense is committed in more than one district, the Sixth Amendment does not preclude a trial in any of those districts. *Armour Packing Co.* v. *United States*, 209 U. S. 56.

Overt acts performed in one district by one of the parties who had conspired in another district in violation of § 5440, Rev. Stat., give jurisdiction to the court in the district where the overt acts are performed as to all the conspirators. *Brown* v. *Elliott*, p. 392, *post*.

United States v. *Kissel*, 218 U. S. 601, followed to the effect that a conspiracy under § 5440, Rev. Stat., may be a continuing one, and that the offense is not barred on the expiration of the period from the date of the conspiracy itself.

The fact that one of the conspirators was the servant of another conspirator does not preclude there being a conspiracy between them; and, until there is an affirmative withdrawal from the conspiracy by the servant, his acts bind his employer and co-conspirator so far as preventing the statute of limitations from running.

Until a conspirator affirmatively withdraws from a continuing conspiracy there is conscious offending that prevents the statute from running.

A disclosure to the Government by a conspirator does not amount to a withdrawal that would start the statute running if he thereafter commits overt acts, and whether there was acquiescence in the later acts of another conspirator is for the jury to determine.

Pleas in abatement on account of irregularities in selecting and impaneling the grand jury which do not relate to the competency of individual jurors must be pleaded with strict exactness and at the first opportunity. *Agnew* v. *United States*, 165 U. S. 36.

While there may not be a conspiracy by one person alone, it is possible that some of the evidence may be admitted as against individual defendants and not against all; and it is not error for the court to charge that the jury might convict any one of the

defendants alone, if accompanied by the statement that his instructions related to the sufficiency of evidence produced as to each defendant. In this case the charge of the court in regard to the conviction of one or more of the defendants was not to their prejudice but in their interest.

Whether the conviction of one of several persons charged with conspiracy can ever be illegal will not be considered when it appears that more than one have been convicted.

An objection to the admission of testimony in a trial for conspiracy offered exclusively as against one of the defendants becomes immaterial if that defendant is acquitted.

Even if a letter addressed to one of the defendants charged with conspiracy were improperly taken from the mails the fact is not relevant to the question of the guilt of the conspirators.

While any evidence affecting a particular defendant in a trial of several for conspiracy may be important to him while on trial, it ceases to be so in the reviewing court, if that defendant was acquitted.

In this case it does not appear that the jury was coerced by the court into agreeing on the verdict or that the conviction of some of the defendants and acquittal of others was the result of an improper agreement between the jurors.

Where the jury render a verdict within the issues, testimony of jurors themselves should not be received to show matters which essentially inhere in the verdict and necessarily can receive no corroboration.

35 App. D. C. 451, affirmed.

United States v. Stever. (222 U. S., 167.)

The question in the present case was as to the construction of sections 3894 and 5480, Revised Statutes—whether they relate to the same offense, indictable and punishable under either of the sections, or to different offenses. The Supreme Court took the latter view, holding that section 3894 relates to lottery schemes and schemes having a similitude thereto and section 5480 to schemes of general fraud.

Interstate Commerce Commission v. Union Pacific Railroad Company; Same v. Northern Pacific Railway Company; Same v. Great Northern Railway Company. (222 U. S., 541.)

These were appeals by the Interstate Commerce Commission from a decree of the Circuit Court of the United States for the District of Minnesota enjoining a reduction of rates on lumber and other forest products from points in Washington, Oregon, and Montana to St. Paul, Omaha, and Chicago. The most important question in the case was as to the validity of the commission's order reducing the rate from Pacific coast points to St. Paul and other points east of the so-called Pembina-Port Arthur line, running from the Canadian line south through Fargo, N. Dak., to Port Arthur, from 50

to 45 cents per hundred pounds. Appellees attacked the order of the commission as beyond the latter's power and void, principally because entered without any evidence or finding that the rates fixed by the carriers were unjust and unreasonable. The Supreme Court, in line with the argument made on behalf of the commission against the contention of appellees, held that there was sufficient evidence to support the order and sustained its validity in all respects.

United States v. Morgan. (222 U. S., 274.)

This was an indictment under the pure food and drugs act of June 30, 1906, for shipping misbranded goods (mineral water) in interstate commerce. The case turned upon the construction of sections 4 and 5 of the act. These provide for an examination by the Department of Agriculture of specimens of adulterated or misbranded foods and drugs, a notice to the party from whom any sample may have been obtained, if the article is found to be misbranded, and a hearing before that department; and if it appears that the act has been violated, such fact, with a copy of the result of the examination, shall be certified to the proper district attorney, who shall cause appropriate proceedings to be instituted. Defendants in error were convicted; but a motion in arrest of judgment was sustained because the indictment failed to allege notice and opportunity to be heard, the court holding that these were prerequisites to a criminal prosecution under the act. This decision was reversed by the Supreme Court, which held that such investigation or hearing is not a condition precedent; that while the district attorney is compelled to act when he receives such report from the Department of Agriculture, he is not deprived of the power voluntarily to proceed under his general powers in any case.

United States v. Baltimore & Ohio Southwestern Railroad Company. (222 U. S., 8.)

This case involved the construction of certain provisions of the cattle quarantine act of March 3, 1905 (33 Stat., 1264), which forbids the receipt for transportation or the transportation of cattle or other live stock affected with any contagious or infectious disease from a quarantined State or Territory to any other State or Territory. The question was whether in a shipment of such cattle from a quarantined State to one not quarantined the statute applies to a connecting carrier who, as in the present case, receives and transports the cattle wholly outside of the limits of the State under quarantine. The Supreme Court, following the rule that penal statutes must be strictly construed, held that such a carrier is not liable.

Glickstein v. United States. (222 U. S., 139.)

This was a prosecution for perjury committed by Glickstein, a bankrupt, while being examined before a referee in bankruptcy concerning the disposition of his property, etc., under section 7, subdivision 9, of the bankruptcy act of 1898. Subsection 9 also provides that "no testimony given by him (the bankrupt) shall be offered in evidence against him in any criminal proceeding." Glickstein claimed immunity from prosecution under this provision. The Supreme Court, however, held that the immunity afforded by the act is not applicable to a prosecution for perjury committed by the bankrupt when examined under it, but relates to proceedings for a past offense.

Heckman v. United States. (224 U. S., 413.)

This case and the three cases next following presented substantially the same questions and were heard simultaneously. They were suits to cancel certain conveyances of lands allotted by the United States to the Cherokee, Choctaw, and Seminole Indians and Seminole freedmen, and by them transferred in violation of existing restrictions upon the right of alienation imposed by Congress. Altogether there were 301 suits brought against more than 16,000 defendants, for the cancellation of some 30,000 conveyances, made by as many grantors, members of the Five Civilized Tribes. The most important question was that relating to the capacity of the United States to sue in its own courts to enforce the restrictions, which the Supreme Court, after reviewing the relations of the United States to the Indians as established by treaties and statutes, answered in the affirmative. It held that the maintenance of the limitations prescribed by Congress was distinctly an interest of the United States, and that a transfer of the lands in violation of the restrictions was not merely a violation of the proprietary rights of the Indian but of the governmental rights of the United States. Defect of parties, on account of the absence of the Indian grantors, and multifariousness were other objections urged by opposing counsel, both of which the Supreme Court overruled.

Mullen v. United States. (224 U. S., 448.)

As indicated in the preceding case, here the conveyances, the validity of which were at stake, were made by the Choctaws. The case differed from that of Heckman *v.* United States in that the conveyances were of lands belonging to the heirs of allottees, which, under the statutes, the Supreme Court declared did not come within the restriction provisions, and therefore could not be set aside at the instance of the Government.

Goat v. United States. (224 U. S., 458.)

The conveyances in this case were made by Seminole freedmen. The Supreme Court sustained the bill except in so far as it related to conveyances of surplus lands made by adult freedmen subsequent to April 21, 1904, the date upon which the restrictions as to such lands were removed.

Deming Investment Company v. United States. (224 U. S., 471.)

Here the conveyances involved were made by the Seminole Indians. Some of them were held valid and others invalid, the Supreme Court following the Goat case.

Ripley v. United States; United States v. Ripley. (223 U. S., 695.)

This was an appeal from the Court of Claims in an action for damages sustained by Ripley while carrying out a contract to build a jetty in the harbor of Aransas Pass, Tex. The chief contention related to Ripley's right to recover damages occasioned by the refusal of the inspector in charge to permit the laying of blocks upon the jetty as the work progressed, the latter's decision, under the contract, being final as to when the blocks should be put in place. The conclusive character of the decision, the Supreme Court held, raised a corresponding duty that the inspector's judgment should be reasonably exercised, with due regard to the rights of both contracting parties; and that his refusal constituted such a gross mistake and an act of bad faith as entitled the contractor to recover the damages caused thereby, affirming, with a slight modification, the judgment below.

Leary, administratrix of Leary, v. United States. (224 U. S., 567.)

This was a petition by Leary for leave to intervene in the case of the United States *v.* Benjamin F. Greene et al., a suit brought by the United States to subject to its claims 400 shares of railway stock standing in the name of one Kellogg, as being an investment made with diverted trust funds belonging to the Government, the money invested having been obtained by Greene through his participation in the well-known Carter frauds in connection with the Savannah river and harbor improvements, and by him turned over to Kellogg. Appellant claimed the stock as security and indemnity to her husband, since deceased, for signing the bail bond forfeited by Greene in criminal proceedings had against him. The Government contended that it was against public policy to indemnify bail in a criminal case; it also urged laches. Both propositions were overruled by the Supreme Court.

United States v. Barnes. (222 U. S., 513.)

The single question here was whether section 3177, Revised Statutes, is applicable to the collection or enforcement of the specific tax imposed on oleomargarine by the act of August 2, 1886 (24 Stat., 209). This section, which is a part of the second chapter of the title of the Revised Statutes relating to the internal-revenue laws dealing with assessments and collections, provides that an internal-revenue officer may enter any building where any *articles or objects subject to tax* are made, etc., for the purpose of examining the same, and subjects the owner, superintendent, or agent of the building excluding such officer to pay a forfeiture, and any person forcibly obstructing such officer in the enforcement of the law is liable to a forfeiture or imprisonment. The Supreme Court was of the opinion that section 3177 relates to all articles subject to internal-revenue tax, and is therefore applicable to the taxes which the oleomargarine act imposes; that otherwise the act would fail of its purpose, as it does not in itself provide a complete and effective scheme for their enforcement.

United States v. Munday. (222 U. S., 175.)

This was an indictment under section 5440, Revised Statutes, for a conspiracy to defraud the United States by illegally obtaining title to a large tract of valuable coal lands in Alaska. The scheme consisted in inducing various persons to make entry of the lands, apparently for themselves but in reality for certain corporations, for the purpose of securing to such corporations more coal land than they could legally locate for themselves. The principal question, and the one upon which the case turned, was whether section 2350, Revised Statutes, which, among other things, prohibits more than one entry of coal lands "by the same person or association of persons," is a part of the coal-land law of Alaska; in other words, whether the restrictive features of the section authorizing but one entry by each qualified entryman are applicable to that Territory. This section, which, with others, forms the general coal-land law of the United States, was extended to Alaska in 1900, but as the general law had reference to surveyed lands only, and the Alaskan lands were unsurveyed, Congress in 1904 amended the act of 1900 and made the general law applicable to the unsurveyed lands, prescribing, however, because of local conditions, a somewhat different method of procedure. Defendants in error contended that the legislation was conflicting, and that the restrictions in the general law authorizing but one entry did not apply to locations authorized by the act of 1904, that act operating to remove the restrictions. The Supreme

Court decided against this contention, held that section 2350 was continued in force in Alaska by the act of 1904, and the judgment of the court below was reversed and the case remanded for further proceedings.

United States v. Wong You. (223 U. S., 67.)

The Supreme Court decided in the present case that the alien immigration act of February 20, 1907, is applicable to Chinese aliens illegally coming to this country, and that they may therefore be summarily deported at any time within three years, in accordance with the provisions of the act, notwithstanding the Chinese exclusion laws upon the subject.

United States v. Miller; Same v. Same. (223 U. S., 599.)

These were writs of error to test the sufficiency of indictments charging the solicitation and acceptance by defendants in error of concessions from the legally established rates on certain interstate shipments, in violation of section 1 of the Elkins Act as amended by the Hepburn Act. The cases turned upon the single proposition as to whether the posting of a rate in a depot is essential to its establishment. The Government pointed out that if posting were essential the inadvertent or mischievous destruction or removal of a printed schedule would disestablish or suspend the rate, a result not intended by the act; and it was sustained in this view by the Supreme Court.

United States v. Nord Deutscher Lloyd. (223 U. S., 512.)

This was an indictment against defendant in error, a German corporation operating a line of steamers between Bremen and New York City, and maintaining an office and place of business at each point, charging it with taking, at Bremen, 150 rubles as security for the return passage of two aliens, unlawfully brought into the United States, in violation of that provision of the immigration laws which forbids such action and requires the return of such aliens free of cost. In the court below a demurrer was sustained upon the ground that the provision in question does not apply to an act done by an alien corporation in a foreign country. The Supreme Court reversed the judgment, declaring that while a statute has no extraterritorial force, and one can not be indicted here for what he does in a foreign country, the making of a contract in a foreign country might, as in this case, create a condition operative in this country, under which acts of omission or commission could be punished here; and that the retention of the money by the company at New York, when it should have been refunded, constituted an affirmative violation of the statute there.

Atchison, Topeka & Santa Fe Railway Company v. United States. (225 U. S., 640.)

Plaintiff in error brought suit for the recovery of an amount alleged to be due it for transporting the mails between Chicago and Kansas City, basing its claims upon the operation of "full-line" service, which it continued to maintain after being informed by the proper postal authorities to reduce it to "half-line" service. The Supreme Court decided against the railway company upon the ground that public policy required that the mail be carried subject to postal regulations, and that it was for the Postmaster General to determine what service was needed and the conditions under which it should be performed.

United States, Interstate Commerce Commission, and Federal Sugar Refining Co. v. The Baltimore & Ohio Railroad Company. (225 U. S., 306.)

The Supreme Court in the present case affirmed the decree of the United States Commerce Court enjoining pendente lite the enforcement of an affirmative order of the Interstate Commerce Commission directing that certain railroad companies and others, appellees here, abstain from paying allowances to one shipper for lightering sugar across New York Harbor unless it paid the same to other shippers. The Government and other appellants took the position that the order in question was not subject to review by the Commerce Court. The Supreme Court, however, held that under the statute the Commerce Court had jurisdiction, following Procter & Gamble Co. *v.* United States (225 U. S., 282); and it remanded the case for disposition on the merits "in the forum selected by Congress for that purpose."

Cherokee Nation and United States v. Whitmire, Trustee for Freedmen of the Cherokee Nation. (223 U. S., 108.)

This was an appeal to review a supplemental decree of the Court of Claims directing the Secretary of the Interior to enroll upon the final roll of the citizens of the Cherokee Nation the names of more than 1,500 Cherokee freedmen and their descendants and to permit their participation in the distribution of the tribal property. After the adjudication of the freedmen's rights by the Court of Claims, to whom the matter had been referred by Congress for that purpose, and the enrollment of the freedmen, additional legislation was passed providing for the revision and correction of the Cherokee citizenship rolls. Finding, upon investigation, that the freedmen herein were improperly enrolled, the Secretary ordered their names stricken from the roll; and this action was sustained, the Supreme Court upholding the power of Congress to deal further with the subject, not-

withstanding the decree of the Court of Claims determining the rights of the freedmen.

Low Wah Suey v. Backus, Commissioner of Immigration. (225 U. S., 460).

That an alien Chinese woman, the wife of an American citizen, comes within the purpose of that provision of the alien immigration act of 1907, as amended, directing the deportation of "any alien who shall be found an inmate * * * of a house of prostitution" within three years after landing or entry in the United States was decided by the Supreme Court. The wife being incapable of naturalization, held she remained an alien and subject to the terms of the act.

Gritts v. Fisher, Secretary of the Interior, and MacVeagh, Secretary of the Treasury. (224 U. S., 640.)

The question involved here was whether children born to enrolled members of the Cherokee Tribe of Indians after September 1, 1902, and living on March 4, 1906, were entitled to enrollment as members of the tribe and to participation in the allotment and distribution of its lands and funds made under certain acts of Congress. Legislation enacted on July 1, 1902, looking to the dissolution of the Cherokee tribal government, excluded such children, but later legislation (while the tribal government was still in existence) provided for their inclusion. Appellants claimed vested rights under the act of 1902, and that the act of 1906 was unconstitutional because an impairment of such rights. The Supreme Court ruled against this contention, and held that Congress had complete control over the Indians, and therefore the right to legislate so long as the tribal relations continued.

Johnson v. United States. (225 U. S., 405.)

This was a writ of certiorari to the Court of Appeals of the District of Columbia involving the validity of Johnson's conviction of murder. The substantial question presented was whether section 330 of the Criminal Code of the United States, which authorizes the jury in case of murder in the first degree to add to their verdict the words "without capital punishment," applied to the District of Columbia. The Government argued that while some of the provisions of the Criminal Code were applicable to the District of Columbia, it was evident from the report of the commission appointed to codify and revise the criminal and penal laws of the United States and from the history of the enactment of the Criminal Code that this particular provision was not applicable, but that the case was governed by the Code of Law for the District of Columbia ("District Code," 1902), which provides that the "punishment of murder in the first

degree shall be death by hanging," and makes no provision for a qualified verdict; and this was the view taken by the Supreme Court.

Glasgow v. Moyer, warden of the United States penitentiary at Atlanta, Ga. (225 U. S., 420.)

The Supreme Court affirmed the decision of the District Court of the United States for the Northern District of Georgia denying appellant's petition to be discharged on habeas corpus from the custody of the warden of the United States penitentiary at Atlanta, Ga., where he was serving sentence, upon a conviction of depositing a copy of an obscene book in the United States mails in violation of section 211 of the Criminal Code. Numerous irregularities and the unconstitutionality of section 211 were among the objections raised. Both courts held that Glasgow's remedy was a writ of error, their decisions being based upon the well-known doctrine that the writ of habeas corpus can not be made to perform the office of a writ of error.

Ex parte Charley Webb, petitioner. (225 U. S., 663.)

This was an original application for writs of habeas corpus and certiorari in which the Supreme Court held that the enabling act for Oklahoma had not, either expressly or by implication, repealed the act of 1895, regulating the liquor traffic in what had previously been the Indian Territory, with reference to the interstate introduction of intoxicating liquors.

GEORGE W. WICKERSHAM,
Attorney General.

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